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July 2013

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Quote of the Month: " **THE SCIENCE OF TODAY IS THE TECHNOLOGY OF TOMORROW**" - Edward Teller

A WORD FROM THE:

Administration

Accelerator Div.

ES&F Div.

Acc. R&D Div.

Operations



NOTE FROM OUR CHAIR: Thomas Roser

I hope everybody had a great summer. Many reviews are occurring at C-AD this summer and fall. It started with a review of the operations and management of the the RHIC facility by the DOE Office for Project Assessment ("Lehman review"). Many people contributed to the preparation of and the presentations during the review making it a very well prepared review with a very positive outcome. The RHIC facility was deemed to be well managed and the costs to be appropriate. A big thank you to everybody for a job very well done.

An additional review took place on the physics design of the Low Energy RHIC Electron Cooling that confirmed that there are no showstoppers for this important project. This week we have a review of the BLIP Raster project (DOE review) and next week we have an audit by DraxImage of the QA and QC of our Sr-82 isotope production. Then in October there will be a comparative review by DOE HEP of three accelerator test facility upgrades: the BNL ATF, the FNAL ASTA and the SLAC FACET. Much work by Ilan Ben-Zvi and his group has gone into making an excellent proposal for upgrading the present ATF and moving the facility into building 912. The great record of successfully operating for 20 years as the first user facility for advanced accelerator R&D experiments together with this very strong upgrade proposal bodes well for ATF in this review.

▶ Arrivals/Departures

Safety Stats

CONFERENCE PROJECTIONS DUE: DUE SEPTEMBER 12TH

DID YOU KNOW??

Check out who received an employee Service Award this year! 2013 Collider-Accelerator Dept. employees who received a Service Award are listed [here](#). Last Years Service Awards are listed [here](#).

Patricia O'Grady was married on July 26, 2013 to Christopher Urena! Take a peak at some [pictures](#) from that special day.

Summer Sunday went very well this year! Please take a look at quick [video](#) showing last Augusts Summer Sunday.

EVENTS/SEMINARS...



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

Sept. 11 ~ (Along Brookhaven Ave. | 12pm) 9/11 Memorial

Sept. 12 ~ (Bldg 510 SCR | 3:00) Particle Physics Seminar, "Weak Lensing Science Towards the Hyper Suprime-Cam Survey" Presented by Hironao Miyatake (Princeton)

Free-Electron Laser Conference (FEL'13) was a great success! Thank you to the Local Organizing committee for all your hard work! Pictures were posted to the [website](#), take a look!

HEALTHFEST2013!! Did you know it's the month for HEALTHFEST already! Take a look at all the [events](#) coming up in October and if you haven't yet, [sign up!](#)

Blackforest Star Party 2013! Steve Bellavia just got back from the Blackforest Star Party...



Attempting time lapse photography using an intervalometer for his Canon EOS, for the first time, he created this very cool video.. check out the [video](#) here!

WHAT'S GOING ON IN OUR NEIGHBORHOOD?

Interested in Cycling? Why don't join in on the [Bike MS: East End Ride](#) on Long Island or ride from Boston to NY at the [Cycle for the Cause](#), [Brita Climate Ride: NY to DC](#) and [NYC ~ DC Climate Ride!](#) More coming up in October.. [Piermount Bike Festival](#)

Sept. 12 ~ (Brookhaven Center | 7:30 & 9:30) BLOOD DRIVE

Sept. 17 ~ (Berkner Hall (Lobby) | 8:30) Edwards Technology Demonstration "nXDS Scroll Pump Technology" ~ Presented by David Steele and Vic Chidgopkar (Edwards Vacuum Science).

Sept. 18 ~ (Berkner Hall (AUD) | 4:00) Brookhaven Women In Science (BWIS) Event ~ "Wife, mother, Scientist or is it the other way around?!", Presented by Mina Bissell (LBNL)

Sept. 23 - (Berkner Hall (AUD) | 4:00) Pegram Lecture, "Supernova and the Discovery of the Accelerating Universe", Presented by Adam Riess (Johns Hopkins U.)

Sept. 24 - (Berkner Hall (AUD) | 11:00) Pegram Lecture, "Precision Measurements of the Hubble Constant and PASS", Presented by Adam Riess (Johns Hopkins U.)
- (Bldg. 510 LCR | 3:30) Physics Colloquium, "Electric Dipole Moments and the Magnetic Charges of the Standard Model" Presented by Dennis Sivers (U. of Michigan)

IN OTHER NEWS...

Are We Martians After All???~ A new theory proposes that life began on Mars and made its way to Earth on a meteorite. [Read more..](#)

Hot to Get Fresh Water out of Thin Air ~ Researchers at MIT and the Pontifical Catholic University in Santiago, Chile, are working to optimize fog harvesting, the extraction of drinking water from atmospheric droplets... [Read more](#)

Miniature Human Brains Grow in Petri Dish! ~ [Read about it..](#) Best science news headline of the week ~ and maybe the scariest, if you're worried about androids...

DAY AT THE VINEYARDS...

Macari Vineyard ~ [MATTITUCK] No upcoming events at vineyard.

Duckwalk North ~ [SOUTHOLD] No Events Posted

Duckwalk South ~ [WATER MILL] No Events Posted

Interested in Running or Walking? Check out the [lirunning August Calendar](#) for the following events: Fit for families 5K run/walk; Run to Remember and "Mud and Guts" Obstacle Course; Great Cow Harbor 10K; One small Step 5K and Kid's Fun Run, etc.. There are some fun Mud run's coming up as well, please see [Tomcat](#) or [Urbanathlon](#).

For the Kids: American Idol (15 August); Sesame Street Live (13-15 September); Disney on Ice (November) @ [The Nassau Coliseum](#).
Sept. 15 Italian Festival @ Hofstra

Stony Brook Events:

1st Annual LEGO Building Contest: Sept 21-Oct 20 (9-5)
23rd Annual Scarecrow Competition ~ Sept. 27-Oct 31 (3-5)
LI's Got Talent Finals: Oct 4 (6:30-8)
Walk for Beauty 2013: Oct 20 (8:30am)

Coming up in October - Nassau Coliseum the Auto Show & Home Show!

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

Jamesport Vineyards - No Events Posted

Martha Clara Vineyards - [RIVERHEAD] SEPTEMBER ~ 13 (7-9pm) STOMP PARTY; 14 (1-5) The Bobby Nathan Band; 15 (1-5) Ted Hefko and the Thousandaires; 21 (1:30-5:30) Latinology; 22 (1-5) Rattlesnake Dawn "Country Music with a Bite"; 27 (7:45) LI Comedy Festival; 28 (1:30-4:30) Eastbound Freight Bluegrass Band; 29 (1:30-4:30) The Brian Duggan Trio; OCTOBER ~ 5 (2-6) Vanessa Trouble; 6 (2-6) Keith Maguire Acoustic Duo; 13 (2-6) Henry Haid only in America Entertainment; 14 (1-5) The Two Dons Electric Guitar Duo

Palmer Vineyards - [RIVERHEAD] *Courtyard Reservations available 5/18 ~ 8/31*, *Live Music every weekend*, *Gourmet Food Trucks Every Saturday* Every Sunday Yoga in the Vineyard (11am) \$25 pp and Mimosa Bar.

Pindar Vineyards - [PECONIC] ~ Live Music Every Weekend

Baiting Hollow Farm Vineyard ~ [CALVERTON] *Music every Sat & Sun from (2-6pm)* Sept. 14 ~ (12-2) Tommy Keys & (2-6) Southbound; Sept. 15 ~ Acoustic Soul; Sept. 21 ~ (12-2) Tommy Keys & (2-6) Ricky Roche; **Sept. 22 ~ Southbound**, Sept. 28 ~ (12-2) Tommy Keys; Sept. 29 (2-6) Southbound; Oct. 5 ~ (12-2) Tommy Keys & (2-6) Ricky Roche; Oct. 6 (2-6) Southbound; Oct. 12 ~ (12-2) Tommy Keys & (2-6) Ricky Roche; **Oct. 13 (2-6) Southbound**

Paumanok Vineyards - [AQUEBOGUE] September 28 (6-9) Paumanok's 30th Anniversary Celebration; October 11 Paumanok Wine Dinner at Stone Creek Inn; November 2,3,9,10,16, & 17) Paumanok Futures Barrel Tasting

NOTE FROM OUR ADMINISTRATION: Stephanie LaMontagne-McKeon



The Administrative group is preparing for fiscal year end closing on Thursday, September 26th. The goal at closing is to reflect the full value of all effort performed, as well as the value of all goods and services received, in the annual cost reported to DoE on September 30th. While much of the activity associated with this process should be transparent to you, your assistance may be necessary.

How can you help?

Complete (but do not submit) your September time card by Monday, September 9th. Please note that you may modify the card as necessary until you are required to submit it on Tuesday, September 17th.

If you are a credit card holder, be attentive to the two cut-off dates in September and promptly enter project numbers for those purchases that should not be charged to your default project.

If you are the requestor for a high-value procurement and anticipate a material delivery in September, please keep your administrative group in the loop on any changes in the delivery schedule.

If you are a technical representative on a construction, service or maintenance contract, assist your administrative group in obtaining and/or evaluating the vendor's estimated level of effort through September 30th.

In summary, in every interface with the financial system (i.e., time cards, web reqs, stores withdrawals, RFQ's, work orders, credit card purchases, etc.), please prepare your input carefully to ensure that the appropriate project numbers are referenced. Once the year is closed, we cannot correct prior year entries.

Lastly, if you are a supervisor, group leader or division head, please be attentive to the financial documentation prepared by your employees and follow-up to ensure that they respond to administrative requests on a timely basis.

NOTE FROM OUR ACCELERATOR DIVISION: Wolfram Fischer



Now firmly in the summer shutdown only the two Tandem accelerators run for outside users. During the shutdown we also advance upgrades. The four most important new ones are these:

We have started a reliability upgrade of the Linac, in operation since 1971, led by Deepak Raparia and Vinnie LoDestro. The first step will be the replacement of one of the six tube types by 5kW solid state amplifiers. These are much more reliable and also much more compact. Later other upgrades will follow including upgrades to the instrumentation.

In mid-August the technical approach for electron cooling for low-energy RHIC operation was reviewed. Vladimir Litvinenko, Alexei Fedotov and others had developed the bunch-beam cooling approach based on a superconducting gun and booster cavity. This will be the largest RHIC upgrade in the next few years, and aims to increase the Au+Au luminosity by an order of magnitude. This upgrade is necessary since hints of a critical point (an endpoint of a line describing a phase transition) in the nuclear matter phase diagram were found, but many more collisions are needed to clarify the situation.

Another large upgrade, led by Don Bruno, is the replacement of the RHIC bipolar 300A interaction region power supplies. Although there are only 14 of these power supplies in service, we had 57 replacements over the last decade, i.e. on average one third of them failed every year.

In the week of 9 September a review for a BLIP raster system will take place. Rob Michnoff is the project leader for this. Right now the 200 MeV Linac can deliver more beam than can be used to make medical isotopes. With the raster system the beam will be spread out more evenly over the targets allowing for more protons to be delivered and thus resulting in more medical isotopes to be produced. The raster system is also a pre-condition for a possible doubling of the average Linac current in the future.

The catalog of all Technical Notes is <http://www.rhichome.bnl.gov/AGS/InternalReports.html>, and it is linked from both the Department and Accelerator Division home pages.

NOTE FROM OUR EXPERIMENTAL SUPPORT & FACILITIES DIVISION: Phil Pile



We are now approaching three months into our summer shutdown work, nearly halfway through. We are holding to a 2 January start for Run 14. As usual, our 2014 budget is not yet finalized so we can only plan based on present DOE guidance which would allow about 22 weeks of 4 degree cryo operation. The plan remains the same as I reported last month, a short low energy run followed by a long full energy gold-gold run. If these runs go as planned we should have time left (just over a week) for another short run. The experiments are thinking about this with a decision on the ion species to be determined later. We have begun the engineering to install a gold foil target inside the STAR IR beam pipe. This target will not intercept the primary beam, only the halo. The experiment hopes to show that events that come from beam halo-gold target interactions can be separated at the trigger level from the general halo-beam pipe interaction background and to determine, if possible, the composition of the beam in the halo. The ultimate goal is to allow "fixed target", parasitic running at energies similar to the AGS and CERN SPS fixed experiments of the '90's.

BLIP and the Building 801 Target Processing Lab (TPL) are both in a maintenance mode although some TPL target processing remains to be done. A new LINAC beam raster project for BLIP will be reviewed (AIP Technical, Cost, Schedule and Management Review) by an outside DOE committee at the end of this week followed by an QA/QC audit of the TPL next week by one of our customers (DRAXIMAGE) that purchases strontium produced at BLIP and processed in the TPL. Needless to say personnel in the isotope production group are a bit stressed at the moment with one or two reviews to come before the next BLIP production run.

NSRL experiments for the fall are set to start on 7 October and run through 15 November. In addition, funding for additional NRO experiments has been approved with the experiments scheduled for the 1 week after the NASA NSRL experiments end. The NSRL facility will be the subject of a visit by high level scientists from the NASA Human Research Program (HPR). This visit will take place on 25 September and will give us a chance to show off this great facility.

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



The Free-Electron Laser Conference took place at New York City.

The attendees of FEL'13, chaired by Vladimir Litvinenko and supported by many in C-AD visited the ERL and the ATF. The conference was a great success thanks to the dedication of Tracy Blydenburgh, Nancy Boyle, Nicholas Franco, Pamela Manning (who chaired the Local Organizing Committee), Frank Naase, Susan Pankowski, Annabelle Petway, Caitlin Scholl and Tara Shiels.

Gatling gun: All the major subcomponents of the first Gatling Gun assembly have been completed or on their way to be assembled to an industrial contractor in California where final assembly will take place. Following this the assembled Gun will go through high voltage test that is tentatively scheduled to take place in January 2014.

Crab cavity: The double quarter wave crab cavity has been cleaned with chemicals and high pressure rinsed at ANL. The cavity is in the clean room and will be shipped back to BNL after hardware assembly. The cavity surface made great improvement with the new cleaning process, and all the surfaces that contributed to large heat loss in the first test were coated with niobium. The second vertical test is now under preparation.

Coherent Electron Cooling: We have started site preparation for the CeC equipment installation (gates were moved, steel plates were placed on the floor). The 704 MHz cavity was cleaned by Niowave and will be shipped soon. We have conducted successful preliminary design review of the 704 MHz accelerator systems. A frequency tuner on one of the 500 MHz buncher cavities was re-aligned and is now operates properly. The cavity Q factor was measured to be in the range 34,500 to 39,000 depending on the tuner position. Re-alignment of the frequency tuner for the second cavity is in progress.

Energy Recovery Linac: The conditioning of the SRF gun made a significant milestone. Following a few conditioning periods the gun, with the cathode stalk installed, reached full voltage in pulsed mode: 1.8 MV with 40ms pulses at 10Hz, and 2.2 MV with 0.5 ms pulses at a repetition rate of 10Hz. That means that multipacting has been successfully overcome. Conditioning will proceed to achieve CW operation, at which point we will apply a multi-alkaline photocathode to the cathode stalk and go for beam current from the gun.

56 MHz cavity: The cavity has been baked and is ready for its next vertical test.

NOTE FROM OPERATIONS: Paul Sampson



Shutdown '13 continues at RHIC with continuing progress on major projects and maintenance. Installation of e-lens components is progressing well. Cool-down and testing of the yellow solenoid will take place this month and blue tests are expected to start in October. Work on other projects including Stochastic Cooling, CeC and 56 MHz RF continue to show progress.

Shutdown is wrapping up in the pre-injectors and preparation for NSRL run 13c is underway. In addition to normal maintenance items, work on the EBIS source, Booster RF and HEBT vacuum will have been completed during the this shutdown. Commissioning of the new low-level RF system will commence later in the month.

In the AGS, upgrades and installation of the horizontal and vertical e-IPMs are underway. Other projects include, water vacuum and controls systems upgrades.

Maintenance to systems continues to progress well and work on the C15 polarimeter and A20 cold snake is ongoing.

Work on the LINAC continues, with major effort focused on the installation of the new Access Controls System. Completion and commissioning will commence later in the shutdown and the system is expected to be ready before the next BLIP run. In addition to the ACS work, work on the Laser Profile Monitor and preliminary work on the BLIP raster project are scheduled.

CAD area infrastructure systems maintenance and upgrades are continuing. The CAD CATV system display includes daily updates including testing, outages and important dates. This information can also be seen on the web at [RHIC Broadcast](#).

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](#).

ARRIVALS: Welcome!

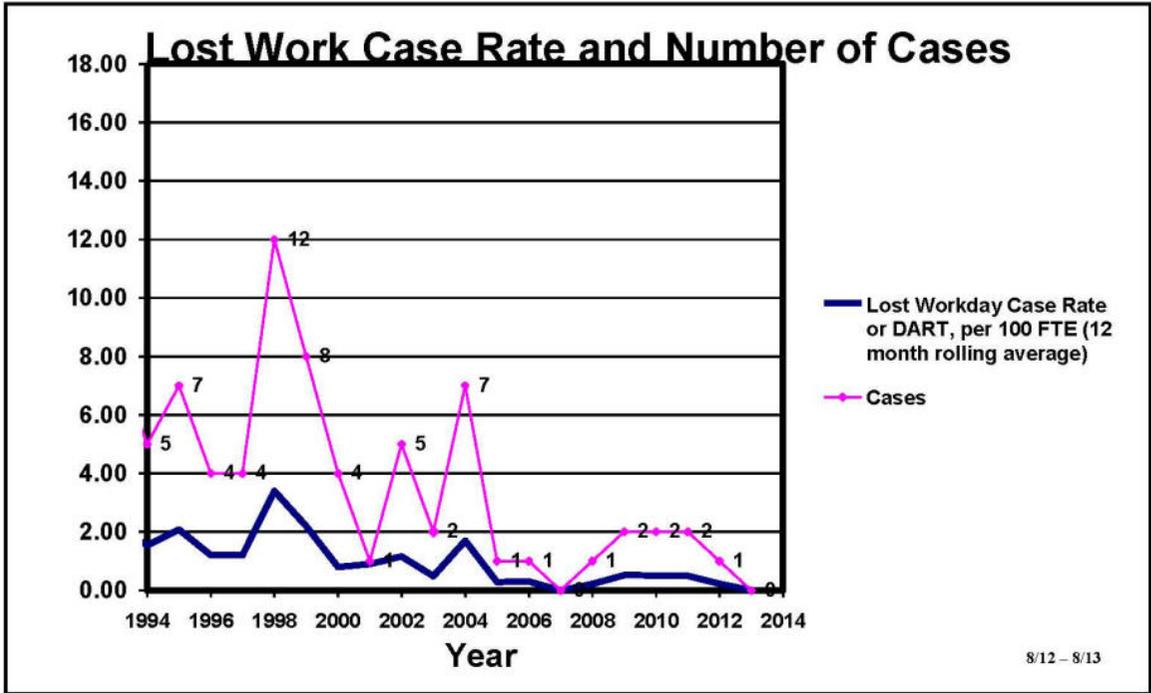
Xiaozhe Shen ~ Guest ~ Joined our dept. as a collaborator for August 25 ~ Oct 31, 2013. He is working with Mei Bai in the Accelerator Physics group

DEPARTURES: Farewell, you will surely be missed..

Daniel Mullaly~ (Design & Documentation) ~ last day is Friday, September 13, 2013.

Steven Savatteri ~ (Booster/AGS Ring P.S. Systems) ~ Last Day was Friday, September 6, 2013

Michael Lafky ~ (Machine Operations) ~ Last Day is September 27, 2013.



C-AD Occupational Injury Statistics

For Year 2012 For Year* 2013

First Aid Cases	5	1
Recordable Cases	3	1
Lost Work Cases	0	0

* Calendar Year through 8/13

CONGRATULATIONS: **Patricia O'Grady**

Married July 26, 2013 to Christopher Urena, Please take a peak of Mr. & Mrs. Christopher Urena making their vows and honeymoon pictures.



