Shutdown Update

The Z011/Z012 magnet is installed, all cryogenic and beam lines are connected and leak checked. The target box will be installed on Friday. Several cyclotron preventive maintenance tasks were completed this week. The Stripper Foil will be serviced next week.

SeGA and DDAS

During the recent discretionary beam time e07502, six detectors from SeGA were instrumented with the Digital Data Acquisition System. Gamma rays were observed in coincidence with fragments transmitted to the focal plane of the S800. Shown in the picture are waveforms captured from three SeGA segments in coincidence with a Ne-25 ion at the focal plane of the S800. Using the transient signals should increase the position resolution of the first gamma-ray interaction used in the Doppler energy reconstruction, thus increasing the sensitivity of the experimental system.

ReA3 Diagnostics System Update

The installation of the final diagnostics boxes for the ReA3 accelerator is proceeding with the placement of boxes 6 and 7 on the balcony. Sam Nash has been busy assembling the vacuum systems and the diagnostics units. All the diagnostics drives, apart from the Foil and Si Elastic Scattering detectors, are mounted on the boxes and ready for alignment. The elastic scattering detectors will be mounted after completing the alignment of the other drives in each box. Final alignment of the \( \beta = 0.041 \) cryomodule coldmass and diagnostics units is scheduled for February. When this installation is completed, the commissioning can proceed to the entrance of the L-Line at the end of the ReA3 deck.

During January, the available beamtime was concentrated on optimizing the tune for injection into the RFQ with the support of Randy Rencsok and Shannon Krause. Dan Morris and Nathan Usher have further improved the LLRF control of the RFQ by changing the RFQ tuners from EPICS control to a direct connection. The pulse waveform was optimized to allow pulsing up to 3200 V-p (100 kW forward power) at 10%-20% duty factor.

Georgios Perdikakis and Carla Benatti measured the Dose versus Light Emission response of the ReA3 CaF(Eu) scintillator viewers. A set of measurements at the L053 viewer upstream of the RFQ has been taken using the off-line LB injector ion source. Over an irradiation time of about two hours, a 1 nA of He\(^{+}\) beam was observed on the scintillator viewer. The degradation of the scintillation yield distribution with time is evident in the 3D pictures below. While the beam conditions were unchanged, the measured beam profiles are very different since the scintillator material degrades depending on the accumulated dose on each region of the scintillator. The quantitative study of this effect is important for understanding the degradation mechanism of scintillators by beams and has applications in the development of scintillator-based beam instrumentation like emittance scanners.

FMLA Processing Changes

Family Medical Leave is now being administered centrally through the Human Resources FMLA/Leave Team. If you believe you have an FMLA qualifying event, please contact the Leave Team at 517-353-4434 or at FMLAleave@hr.msu.edu. Additional information is available here: http://www.hr.msu.edu/timoffleave/supportstaff/FMLAAdd.html.
**HSHSP Makes a Difference**

The High School Honors Science/Mathematics/Engineering Program (HSHSP) is a seven-week, intensive summer research program designed for motivated students from across the United States who wish to gain more experience conducting research. Every year, several NSCL faculty members participate, including Vladimir Zelevinsky, Georgios Perdikakis and Richard Cyburt this past summer.

Georgios Perdikakis’ student SoYon Song was chosen as a semi-finalist for the Intel competition, as was Richard Cyburt’s student Rachel Meyer, who also was chosen as a semi-finalist for the Siemens competition. Both competitions honor high school students and their research projects.

Congratulations to the students, their mentors and everyone who participates in this wonderful program. Hopefully the laboratory’s involvement in this program and its success will continue to grow.

**Seasonal flu**

Influenza (the flu) is a contagious respiratory ailment caused by the influenza virus. It can result in severe illness and even death. The old, young and people with certain chronic health problems are at higher risk for serious flu complications.

Experts believe that the flu virus is spread by droplets made when contagious people cough, sneeze or talk. You may be able to pass on the flu to someone else before you know you are sick, as well as while you are sick. The single best way to prevent the seasonal flu is to get vaccinated each year, but good health habits can help prevent the flu.

Avoid close contact with people who are sick, stay home when you are sick, cover your mouth and nose with a tissue when coughing or sneezing, wash your hands often, and avoid touching your eyes, nose or mouth.

Follow a healthy routine: get ample sleep, be physically active, manage your stress, drink plenty of fluids, and eat nutritious food.

If you have questions about whether you should get a flu vaccine, consult your health care provider. For more about preventing the flu, see the following: [The Flu: A Guide for Parents](#) [Flu & You](#)

**People at NSCL**

There will be many new faces joining NSCL and FRIB at the beginning of February. Dan Stout joins the FRIB project as its Chief Engineer, providing engineering leadership while coordinating the design and integration of engineering systems. Paul Chu will join the FRIB project as the acting Controls Group Leader while Bonnie Lang will focus on the FRIB cryomodule design and preparation for industrial manufacturing as a Senior Mechanical Designer. Christopher Stratton is joining the lab as an Operations Accelerator Engineer I. Rick Caprario will join the lab as a Business Modeler working to develop business processes and systems in the HR group to promote processes, develop position descriptions and provide ongoing operational support. Patrick Mussell will be in charge of desktop computing support and will run the help room, taking over for Tom Cummings, whose job duties will become network and systems support. Finally, Kathrik Padmanabhan is an undergraduate who will be working in Artemis Spyrou’s Research/Experimental group.

**WAMIS Lecture Series**

On Thursday, February 3, NSCL is sponsoring a Women and Minorities in Science lecture at 11:00 AM in BPS 1415. MSU Provost Kim Wilcox will talk about the ADVANCE grant aimed at developing more women into leaders in academic fields. This is part of the grant’s larger goal of strengthening the scientific workforce through increased inclusion of women in scientific careers by attracting, retaining and promoting women in the sciences.

Attendees also are encouraged to stay for a light lunch buffet and to mingle with the Provost and other Co-PIs of the grant in the BPS Atrium.

**Seminars and Events**

- **Tuesday, February 1 at 11:00 AM**
  *Theory Seminar in the NSCL Theory Library*
  Joaquin Drut (Los Alamos National Laboratory): "Making contact: momentum distribution of Fermi gases at large scattering lengths”

- **Tuesday, February 1 at 12:00 noon**
  *Staff Information Talk in BPS 1400*
  Stefan Schwarz (NSCL): “The NSCL-EBIT Coming to Life”

- **Wednesday, February 2 at 4:10 PM**
  *Nuclear Science Seminar in BPS 1400*
  Kim Lister (Argonne National Laboratory): “Precise measurements of electromagnetic transitions in light nuclei: What we can learn, why it matters”

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