

eRHIC Bi-Weekly Status Report

January 22, 2018

Recent Developments:

- The eRHIC Team members submitted seven BNL Proposals in response to the DOE FY2018 EIC Accelerator R&D Funding Opportunity Announcement (FOA) and participated with their collaborators on another four that were submitted through other institutions. The eRHIC Principal Investigators all submitted their proposals by the January 19, 2018. Thanks to the BNL Proposal Center members and the Business Operations staff who all kept us on track for a successful submission!
- Descriptions of two injector schemes for eRHIC (Linac Recirculating Injector and Rapid Cycling Synchrotron) were sent to international experts in the field for review. Charge questions for the reviewers focused on feasibility, tolerances, and cost. Responses are due by the end of January, at which time we will be ready to make the final injector decision.
- Work continues to progress on the eRHIC Pre-Conceptual Design Report (pCDR) report which now contains hundreds of pages of details associated with the eRHIC ring-ring design. Feedback on the pCDR will be the subject of the February eRHIC Program Steering Group, which will take place on Thursday, February 22, 2018.
- eRHIC Work Breakdown Structure (WBS) Level 2 estimators are currently coordinating efforts at developing a high-level eRHIC cost estimate, which will be included as part of the pCDR. The estimators are working toward a February 12, 2018 date for a first draft, leaving time for iterations before the draft pCDR is submitted to the pCDR review team. The Level 2 estimators are:
 - 1.01 - Project Management – Diane Hatton
 - 1.02 - R&D – Ferdinand Willeke
 - 1.03 - Accelerator Systems – Vadim Ptitsyn
 - 1.04 - Infrastructure – Marty Fallier
 - 1.05 - Detector Interface – Elke Aschenauer
 - 1.06 - Pre-Operations – Wolfram Fischer
- Please note the date correction for the eRHIC pCDR Review -- the review will take place on April 25 and 26, 2018 – not April 16 and 17, 2018, as originally noted in this report. The review team is identified and an agenda is under development. The goal will be to make the DRAFT pCDR available to the team in early April and then incorporate their review comments and recommendations, with a final publication of the pCDR in May/June, 2018. We anticipate that the National Academy Study report will be finalized ~May 2018 – coinciding well with our anticipated publication.
- A special discussion session will be held on April 18 in conjunction with the XXVI International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2018, April 16-20, 2018 in Kobe Japan) aiming at producing a white paper on future electron-ion scattering facilities for the European Strategy Update for Particle Physics. In the same workshop, and in addition to a parallel session on the “future of DIS”, a one-day pre-DIS2018 workshop is being organized for April 15. The pre-workshop will have a two-fold agenda: a) to inform the predominantly Japanese attendees about the science and status of the EIC, and b) to initiate a discussion on connections of EIC and its science with other areas of science such as cosmic ray physics, neutrino-matter interactions, and high energy physics. The workshop was recently endorsed by the EIC Users Group, and is being organized by Yuji Goto and Abhay Deshpande, along with six members of diverse Japanese scientific community. An announcement will go out soon.
- The EIC Detector R&D Committee meeting took place at BNL on January 18-19, 2018. All information including the received progress reports can be found at the EIC Detector R&D Web site: https://wiki.bnl.gov/conferences/index.php/EIC_R%25D. The committee was happy with the

progress made by the ongoing eleven projects and is now working on the full report. In order to minimize travel for the participants, the next EIC R&D meeting will take place around the EIC User Group meeting at the end of July. Details are now being worked out.

- The next Center for Frontiers in Nuclear Science (CFNS) Seminar will be given by Ron Belmont of the University of Colorado and will take place on January 25 at Stony Brook. If you have suggestions for seminar speakers please send them to Pia Zurita, Andrey Terasov, Christos Kallidonis, or Niles Feege. The website for CFNS is under construction and a preliminary version can be found at www.stonybrook.edu/cfns. Please send any website comments to Abhay Deshpande.
- Glenn Young, formerly the project manager of the 12 GeV Hall B Upgrade at Jefferson National lab has joined the sPHENIX Project team as the Project Manager, with John Haggerty moving to the new position of Project Scientist. Welcome to Glenn and good luck to both Glenn and John in their new roles!
- The eRHIC Coffee Break schedules have been adjusted slightly to allow C-AD staff members “meeting-free time” on Tuesday mornings and Thursday afternoons. eRHIC Coffee Breaks will now take place every other Wednesday afternoon, alternating between the C-AD Lobby (Building 911) and the Physics Lounge (Building 510). Please join us for the next Coffee Break at 3:30 p.m. on Wednesday, January 24, 2018 in the Physics Lounge (Building 510). Please continue to encourage others interested in eRHIC to attend.

Issues:

- We received guidance for the DOE Nuclear Physics budget briefing in Germantown on February 15, 2018 and are beginning to prepare the briefing materials.
- Strategies will need to be developed for enlarging support for an EIC both within NP and the broader science community.
- The process for preparing a European Strategy Update for Particle Physics is starting and it will be important for the EIC community to contribute to the deliberations.
- The ability of the NPP Directorate to successfully manage and complete the sPHENIX project is an important demonstration to the DOE Nuclear Physics Program that BNL can successfully complete mid- to large-size construction projects. The current focus is on a successful sPHENIX CD-1 DOE Review in FY2018.

Major Near-Term Milestones:

- | | |
|---|---------------|
| • National Academy Panel Report | Spring 2018 |
| • eRHIC Pre-Conceptual Design Report | March 2018 |
| • eRHIC Pre-Conceptual Design Review | April 2018 |
| • Publish eRHIC Pre-Conceptual Design Report | May/June 2018 |
| • Ready for CD-0 Mission Need decision of EIC | June 2018 |
| • Anticipated CD-0 (Mission Need Determination) | Late 2018 |

Calendar:

- | | |
|---|-------------------|
| • eRHIC Coffee Break to be held at 3:30 p.m. in the Physics Lounge (Building 510) | January 24, 2018 |
| • ½ day eRHIC Program Steering Group Meeting | January 25, 2018 |
| • ½ day eRHIC Program Steering Group Meeting | February 22, 2018 |
| • sPHENIX Director’s Review | March 6-8, 2018 |
| • eRHIC Pre-Conceptual Design Review (<i>PLEASE NOTE DATE CORRECTION</i>) | April 25-26, 2018 |
| • sPHENIX DOE CD-1 Review (<i>PLEASE NOTE PROPOSED DATE CHANGE</i>) | May 8-10, 2018 |
| • Award Date for the DOE Accelerator R&D Funding Proposals | July 15, 2018 |

eRHIC SharePoint Site:

- Copies of these Bi-Weekly Reports and other information about eRHIC are located on the eRHIC SharePoint site <https://brookhavenlab.sharepoint.com/sites/eRHIC/SitePages/Home.aspx> . If you have trouble accessing this site, please contact Alyssa Petrone at apetrone@bnl.gov or x7735.