NPP All Hands Meeting

6 April 2016

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Associate Laboratory Director for Nuclear & Particle Physics
Agenda

- Safety
- Property Presentation (Donna King, Aundrea Clifton)
- News: RHIC, sPHENIX, EIC, ATLAS, Management
- Strategic Planning and Growth Opportunities
Safety

- FY 2016 started out well, but we cannot let our guards down
- Several recent incidents at NSLS-II have raised concerns about electrical safety and LOTO implementation:
  - Need to improve work planning and implementation
  - Do not take shortcuts
- Policy highlights:
  - We are all responsible for safety; consider the safety of others
  - Integrate environmental protection, safety and security into our research and operations
  - Adhere to SBMS requirements
  - Reduce risks, conserve resources, protect property, prevent pollution
U.S. Government Property
Property @ BNL

- Property is a high concern to DOE and BSA:
  - Loss, damage, theft, fraud (even if only attempted) are serious matters
  - If you notice or suspect a violation of BNL ethics standards with regard to property, you need to report it to your supervisor
  - Don’t cover up for loose ethics standards of others – you may become part of the problem, not part of the solution

- Let’s welcome Donna King & Aundrea Clifton
High luminosity 200 GeV Au-Au run (10 weeks)
- Goal: Study heavy flavor flow, especially charmed baryons, parton energy loss in QGP, quarkonium studies (for NP milestone DM12)

d+Au beam energy scan (5 weeks)
- Goal: Study beam energy dependence of small system collectivity and QGP properties

Proof of Principle test of coherent electron cooling (1 week)

Run-16 went very well until .... a diode inside a dipole magnet in the blue ring malfunctioned on March 18.
- Repair required warm-up of sector 10-11, opening of dipole, replacement of the diode, and cool-down. Work is ahead of schedule and Run-16 is close to resume. Amazing team work – congratulations & thank you!
- Low power costs may allow us to extend the run to make up for (most of the) lost time
sPHENIX & iTPC Status

New detector collaboration:

- Institutional Board formed in August 2015; By-Laws approved
- First collaboration meeting in December 2015 at Rutgers
  - Collaboration spokesperson team (Morrison/Roland) elected

sPHENIX Project progress:

- Science case recommended in new NSAC LRP
- Preliminary CDR completed
- Director’s cost and schedule review in November 2015
- DOE Baseline design scope due end of May 2016
- sPHENIX solenoid successfully operated at 100 A
- Ongoing discussions with DOE about project structure and official project start

STAR iTPC upgrade project launched (Project Manager: F. Videbaek)
EIC Planning

EIC Users Group kick-off meeting held at UC Berkeley in January 2016; next meeting at ANL in July.

NRC study of EIC science case to commence soon; report expected in mid-2017.

DOE will convene a panel advising on EIC accelerator R&D and launch a national R&D program. Generic EIC Detector R&D Program continues.

NY State funding for Cbeta project with Cornell to start in June 2016.

eRHIC R&D Advisory Committee meets April 7-8, 2016.
ATLAS News

- ATLAS Phase II Director’s review and NSF review went very well – next hurdle is NSF MREFC decision
- Search for permanent Phase II Project Manager is under way
- ATLAS (and CMS) see hints of a new boson with mass ~750 GeV in $\gamma\gamma$ channel
- LHC Run 2 resuming
- 2016 data will bring clarity
Management News

- Laur Littenberg will step down from Chair’s position and retire from BNL on June 30, 2016
- Task Force (Aschenauer, Bishai, Dawson, Gordon, Kettell, Morrison) has been formed to advise on possible internal and external candidates for Chair
- Michael Ernst retires from BNL on June 30, 2016
- Eric Lançon (currently head of ATLAS computing at CERN) is joining BNL and will take over as RACF Director
- Mark Palmer is new Director of the ATF
- Search for Director of eRHIC R&D is under way
Growth
Why Growth?

- BNL cannot prosper when basic science budgets are flat
- Rising salaries and other costs threaten the traditional scientific programs
- Large carryovers from ARRA and NSLS-II have allowed us to postpone facing reality – until now
  - Example: RIF in RHIC experimental operations
  - Ameliorated by SSVSP and actions by Physics Dept management

- Only viable path forward is to secure existing scientific programs and grow applied programs
  - Other Labs are far ahead of us
  - Can be achieved without sacrificing quality of discovery science
  - Focus on areas of NPP strength
  - Applications: NSRL expansion, medical accelerators, medical isotopes, SC magnets, ASICs, etc.
  - Strategic planning at Lab level led by Lee Cheatham
## NPP Growth Opportunities

<table>
<thead>
<tr>
<th>Opportunity for Growth</th>
<th>Funding ($k)</th>
<th>%Probability</th>
<th>Fiscal Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>LHC Hi-Lumi Crab Cavities</td>
<td>$20,000</td>
<td>90%</td>
<td>FY 2018 - FY 2021</td>
</tr>
<tr>
<td>NSRL Expansion</td>
<td>$750</td>
<td>80%</td>
<td>FY2018 cont.</td>
</tr>
<tr>
<td>Hadron Therapy Facility</td>
<td>$2,000</td>
<td>40%</td>
<td>FY 2018 - FY 2020</td>
</tr>
<tr>
<td>Isotope Facility Upgrade</td>
<td>$20,000</td>
<td>40%</td>
<td>FY 2018 - FY 2020</td>
</tr>
<tr>
<td>Tandem Applications</td>
<td>$500</td>
<td>60%</td>
<td>FY2017 cont.</td>
</tr>
<tr>
<td>eRHIC</td>
<td>$1,000,000</td>
<td>80%</td>
<td>FY 2018 - FY 2027</td>
</tr>
<tr>
<td>ASIC Development</td>
<td>$5,000</td>
<td>80%</td>
<td>FY2017 cont.</td>
</tr>
<tr>
<td>ATLAS Phase II</td>
<td>$30,908</td>
<td>90%</td>
<td>FY 2017 - FY 2025</td>
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<tr>
<td>LBNF/DUNE</td>
<td>$19,750</td>
<td>90%</td>
<td>FY 2016 - FY 2020</td>
</tr>
<tr>
<td>Computing Initiatives (Physics)</td>
<td>$13,232</td>
<td>60%</td>
<td>FY 2016 - FY 2020</td>
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<tr>
<td>sPHENIX</td>
<td>Re-direct</td>
<td>90%</td>
<td>FY 2016 - FY 2022</td>
</tr>
<tr>
<td>LHC Hi-Lumi Magnets</td>
<td>$25,000</td>
<td>90%</td>
<td>FY 2018 - FY 2021</td>
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<tr>
<td>KEK Correctors</td>
<td>$3,000</td>
<td>80%</td>
<td>FY 2018 - FY 2020</td>
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