

Summary and Outlook

Presented to
DOE HEP Annual Program Review

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Summary and Outlook

- we believe that BNL's HEP program has a *strong physics direction*
- we believe BNL's HEP program is *completely aligned* with DOE's program
- we are very concerned that HEP *funding trends* will damage this program
- our most threatened areas of research concentration are:

Experimental HEP Research - all the base program, including ATLAS physics

Theoretical HEP research

Superconducting Magnet R&D

- we presented to DOE-HEP the specific impacts for FY04 and FY05 in Germantown in March and were relieved that OHEP was able to provide an additional \$0.3M for post-doc help in Physics this year; relief for SMD is still hoped for

SO...

- we hope for some further increments to relieve our funding situation

BNL Priorities in High Energy Physics

The BNL *Future Facility priorities* in High Energy Physics are:

1. A *BNL Physics Analysis Center* for U.S. Participation in ATLAS Research
2. Approval and start of the *RSVP construction project* in FY 2005
3. Approval and start of the *LSST project* as early as FY 2008
4. Approval and start of the *VLB Super Neutrino Beam project*

BNL HEP Program Opportunities

- *ATLAS Host Laboratory* role, with the *ATLAS Physics Analysis Center*, will provide a vital base for BNL and other U.S. physicists to pursue LHC frontier particle physics for ~20 years
- *RSVP* at AGS will explore new physics in two directions:
 - *CP-violation in the quark sector (KOPIO)*
 - *non-SM physics via lepton flavor non-conservation (MECO)*
- *QCDOC* supercomputer at BNL will be a main lattice gauge resource for understanding soft QCD aspects of particle physics topics
- *LSST* will provide data on the nature of dark energy – the **BIG** mystery!
- *VLB Neutrino Exp. + 1MW AGS Superbeam* offers world-class ν physics
- *Linear Collider R&D* could lead to new HEP contributions from BNL

plus.....

- HEP Theory Group will work to maintain its world class ranking

BNL HEP Budget Outlook

- base program funding for HEP at BNL continues to *decline at a steep and alarming rate*; this is compromising all our research programs
- a slow startup of the LHC Accel. R&D (LARP) and no clear budget path for LC R&D, will force *damaging staff reductions* in the SMD
- the ATLAS Research Program is being *under-funded* relative to the needs of the program, even though LHC will be the center of the U.S. Energy Frontier Program for the next decade
- research staff support for the RSVP program is threatened even though RSVP construction and AGS operations costs will be fully funded by NSF

in short.....

- the BNL HEP program faces a *severe downward funding trend* that will impede or kill the exciting physics prospects that we presented today