

Report from the Project Manager

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Fermilab
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Outline

- ▶ LQCD-ext II progress to date
- ▶ FY18 budget situation and impact
- ▶ Structural and organizational changes
- ▶ FY18 hardware activities & plans
- ▶ Annual DOE review preparations
- ▶ User survey

LQCD-ext II Progress to Date

- ▶ We're in the fourth year of the planned 5-year extension (Oct 2014–Sep 2019)
- ▶ We've received \$8.3 million of our planned \$14 million in funding (59%)
 - (\$2M in FY15; \$3M in FY16, \$3M in FY17, \$0.3M in FY18).
- ▶ Despite a particularly challenging year, we've continued to deliver computing (TF-yrs delivered) to the collaboration and bring online additional resources at BNL.

	FY18 ¹			Cumulative (Oct '14 Thru Mar '18)		
	Goal	Actual	% of Goal	Goal	Actual	% of Goal
Conventional Resources ²	46.5	50.7	109%	372.9	404.3	108%
Accelerated Resources ³	47.7	49.7	104%	350.1	366.4	105%

1) FY18 performance through March 2018

2) Conventional resources operational in FY18: Bc, Pi0, 12s, 16p, BNL-KNL.

3) Accelerated resources operational in FY18: Pi0g, 12k, BNL-IC.

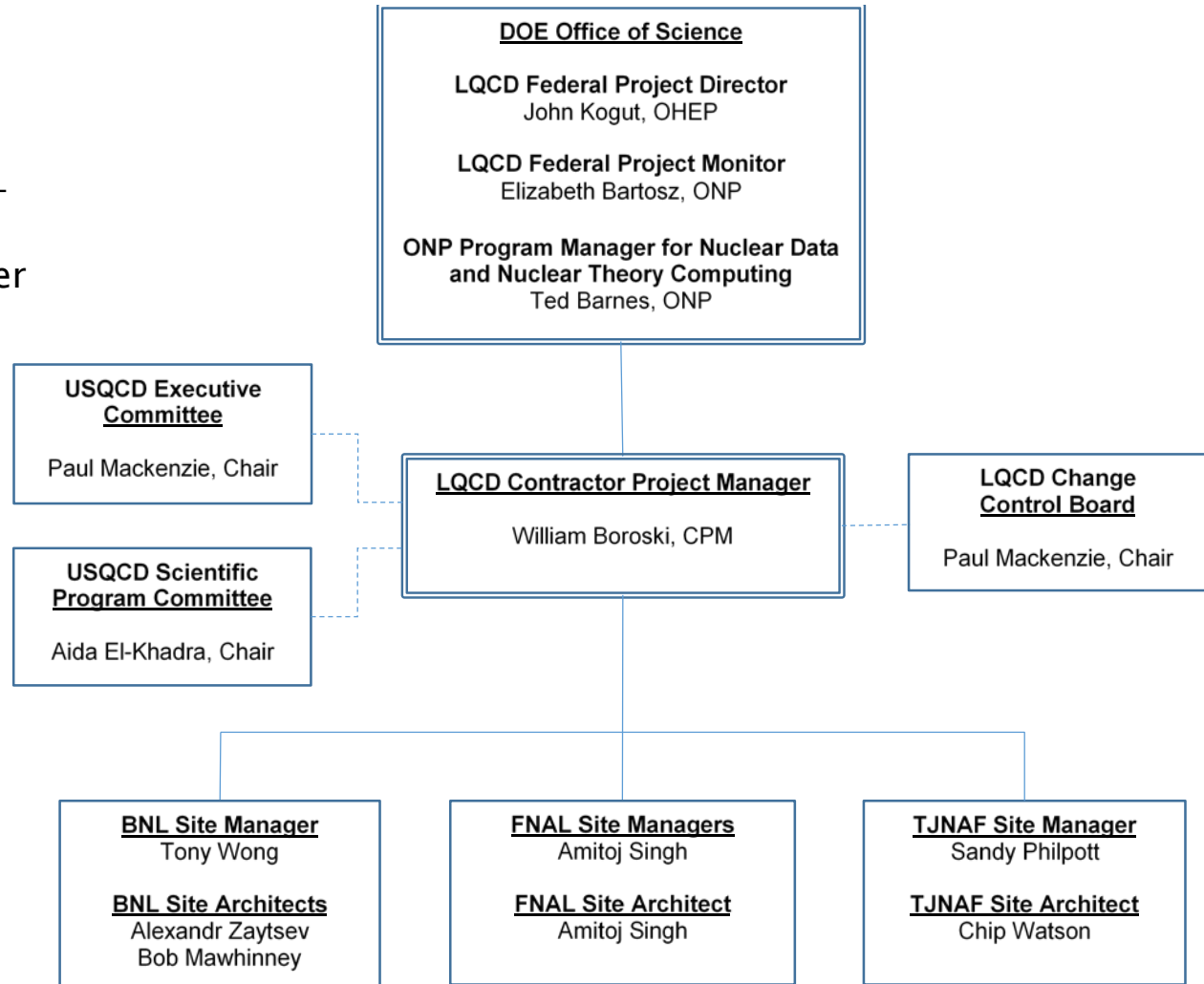
FY18 Budget Situation and Impact

- ▶ In response to the FY18 President's Budget Request, the DOE FY18 Congressional Budget Request (May 2017) zeroed out funding for the LQCD-ext II Computing Project. *We were instructed to stop work on new acquisition planning.*
- ▶ Throughout the remainder of FY17 and all of FY18, the LQCD PM, EC Chair and others worked closely with HEP and NP as the FY18 budget situation unfolded.
 - The project used FY17 carryover operating funds, along with an HEP FY18 allocation of \$300K, to continue running existing hardware in FY18.
 - Sep 2017 – HEP approved the repurposing of FY17 hardware funds to purchase compute time on BNL institutional cluster facilities.
 - Dec 2017 – NP approved the project request to repurpose FY17 hardware funds for computer hardware purchases in FY18 for the BNL Institutional Cluster.
 - Dec 2017 – Formal MOUs were executed between LQCD-ext II and BNL to expand cluster allocations. Expanded cluster use began in January and Skylake procurement initiated.
 - Jan 2018 – NP notified HEP of their plan to support an NP LQCD dedicated hardware project sited at JLab, beginning in FY18.
 - Feb 2018 – LQCD activities at JLab began operating under the new NP LQCD dedicated hardware model.
- ▶ NP and HEP have both expressed interest in supporting the research of the overlapping LQCD communities by continuing to allow both HEP and NP LQCD users to apply for compute time and resources on the machines supported by either office.

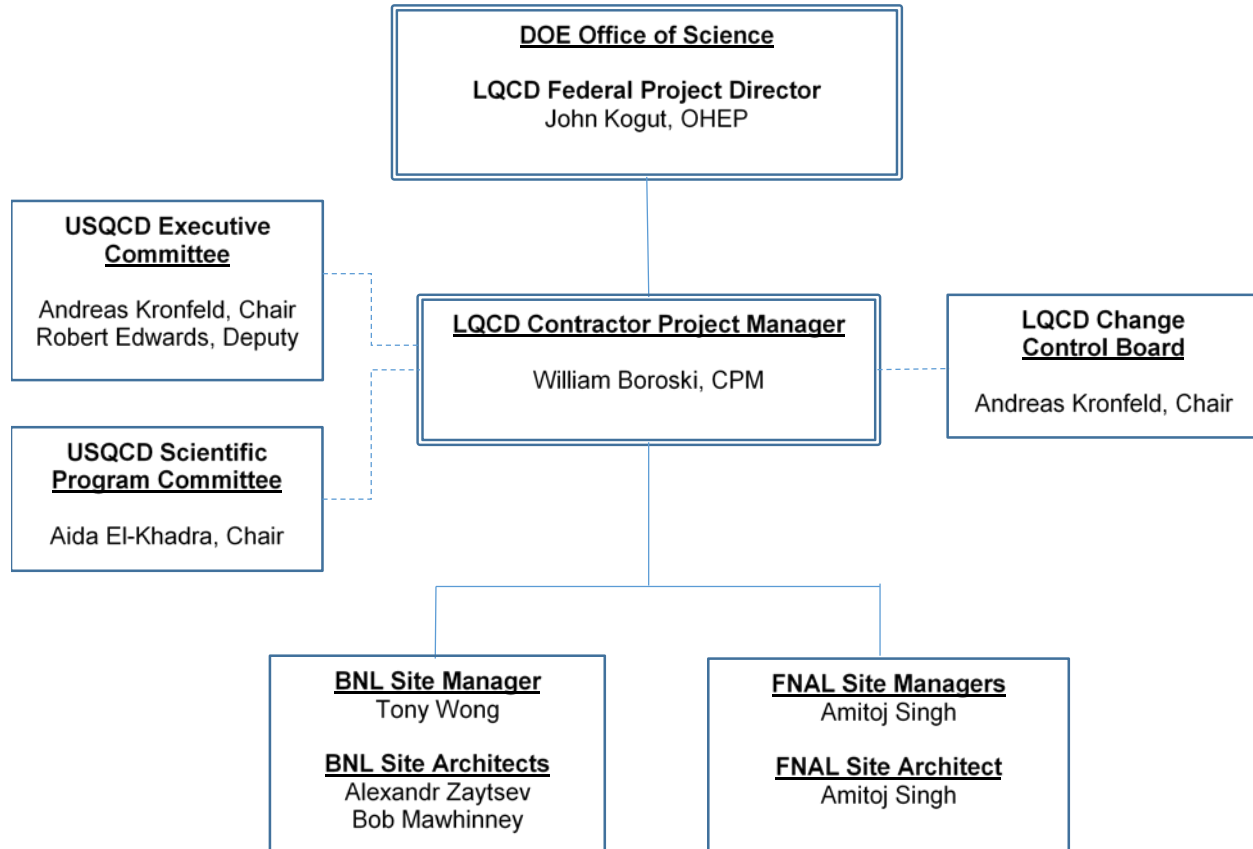
LQCD-ext II Project Team (thru Jan 2018)

Organizational changes since last year:

- Rob Kennedy (ACPM) and Gerard Bernabeu-Arroyo (FNAL co-Site Manager) are no longer with the project.



LQCD-ext II Project Team (as of Feb 2018)



FY18 Hardware Activities

- ▶ In Sep 2017, acquisition planning recommenced once HEP approved the repurposing of FY17 hardware funds.
- ▶ Under the leadership of Bob Mawhinney, the LQCD Alternatives Analysis document was reviewed and completely reworked. New hardware alternatives were defined and analyzed.
- ▶ Under the leadership of Carleton Detar, the FY17 Acquisition Evaluation Committee was reconvened to develop a set of USQCD-specific software benchmarks and collect performance data to assist in evaluating BNL hardware options. The committee also provided a recommendation regarding their preferred acquisition alternative and addressed (7) charge elements.
 - **The FY17 Acquisition Evaluation Committee**
 - *Rob Kennedy, Gerard Bernabeu Altayo, Carleton DeTar, Steve Gottlieb, Don Holmgren, Chulwoo Jung, James Osborn, Amitoj Singh, Chip Watson, Frank Winter, Alexandr Zaytsev*
- ▶ After significant work, the FY17 Acquisition Evaluation Committee recommended that we implement Alternative #1 in the FY17-18 Alternatives Analysis. (Nov 2017)

FY18 Acquisition Results and Future Plans

Implemented Solution

- ▶ A 45–30–25 partition of available funds between Skylake, BNL–KNL, and KNL–IC nodes.
 - Increase BNL–IC allocation from 40 nodes to 80 nodes in January; Initiate BNL–KNL allocation of 66 nodes in February.
 - Procure a new Skylake 64–node cluster (underway with tentative delivery in May – details in Tony Wong’s BNL site talk).
- ▶ Upon receiving NP approval to repurpose FY17 hardware funds, we executed MOUs with BNL to implement the preferred hardware solution.
- ▶ USQCD usage of the new resources began in January.

Looking forward...

- ▶ Given the more favorable FY18 budget that was recently signed into law, HEP has recently approved an additional FY18 allocation of \$850K to the LQCD–ext II project.
- ▶ Subject to available funding, we may receive additional funds later in the year, which will allow us to initiate a new FY18 acquisition process.

Upcoming DOE Annual Review

- ▶ 2018 Annual Review scheduled for May 21–22 at Brookhaven
- ▶ Review charge very similar to previous years....
 - Continued significance and relevance of the LQCD–ext project, with an emphasis on its impact on the experimental programs’ support by OHEP and ONP
 - Progress towards scientific and technical milestones
 - Status of technical design and proposed technical scope for FY17
 - Feasibility and completeness of proposed budget & schedule
 - Effectiveness of proposed management structure, and responsiveness to recommendations from last year’s review
 - Effectiveness of USQCD in allocating LQCD–ext II resources to its community of lattice theorists
- ▶ ...but with a formal request for USQCD to present its plans for further capacity computing
 - What is the status of a whitepaper presenting the research plan for FY2020–2025?
- ▶ ...and a presentation on the accomplishments and status of LQCD–ext II facilities at JLab.

Annual User Survey

- ▶ Annual user survey was released April 4
- ▶ Total responses received = 43



If you have already responded, **THANK YOU!!!**

If you have not yet completed the survey,
please do so while you're here.

If you didn't receive an email invitation to complete the survey,
please come see me.

Questions?