

Lattice QCD Computing Projects
LQCD-ext and LQCD-ARRA

Response to Recommendations
from the
2013 DOE Annual Progress Review of the
LQCD-ext/ARRA Computing Projects

Compiled by

Paul Mackenzie
Chair, USQCD Executive Committee

William Boroski
Contractor Project Manager, LQCD-ext Computing Project

May 5, 2014

This page intentionally left blank

LQCD-ext/ARRA 2012 Annual Progress Review
Response to Review Recommendations

INTRODUCTION

On May 9-10, 2013, the U.S. Department of Energy (DOE) Office of High Energy Physics and the Office of Nuclear Physics conducted an Annual Progress Review of the LQCD-ext (LQCD Extension) and LQCD-ARRA (American Recover and Reinvestment Act) projects. The review was held at the Thomas Jefferson National Accelerator Facility and resulted in a written report that contained no formal recommendations. However, the report did contain five suggestions to help improve project effectiveness and impact. This document summarizes the project response to these suggestions, along with subsequent actions taken.

RESPONSE TO SUGGESTIONS

REPORT SECTION: Executive Summary

Suggestion #1: The review panel suggested that that USQCD consider implementing a mechanism to promote a regular turnover of its Executive Committee (EC) members through a democratic process which would involve the entire collaboration. Several reviewers encouraged USQCD to elect one or more members of the EC by popular vote at the annual All-hands Meeting.

Suggestions 1, 3, and 5 answered together below.

Suggestion #2: The review panel encouraged USQCD to make its allocation policies as transparent as possible, and to share negative reviews and comments and discuss the issues involved with the relevant PIs.

For the last two years, the SPC has been making an effort to make their decision-making more transparent by making their reviews more detailed and fuller and by increasing the discussion of the allocation procedures and results at the all hands meetings. This year, they have begun including more detailed comments on areas in which the committee had concerns. In one case, the committee felt that the proposed calculation was interesting and the strategy was sound, but the project was planning on using a non-optimal set of ensembles. In another case, the project was interesting, but was too exploratory to merit the size of the requested allocation. In yet another case, the calculation was judged to have been done earlier and better

by two other groups. In such cases, the issues were communicated to the PIs, and a response was requested.

REPORT SECTION: USQCD Review – Effectiveness, Scientific Impact, Operational Procedures, and Related Activities

Suggestion #3: It is important that the Executive Committee remains responsive to long-term changes in the field and its mission. To feel the pulse of the LQCD community, it may consider adding one or two term-limited members that are elected by the entire collaboration.

Suggestions 1, 3, and 5 answered together below.

Suggestion #4: In answer to a question from the review panel, it was noted that USQCD has produced ~60 Ph.D.'s over the last 10 years. The review panel considered this productivity impressive and suggested that the collaboration compile these statistics annually.

The Collaboration conducted a new and more complete survey of PhDs this year with the following result.

	2013	2014
Kuti	3	3
Savage	4	5
Sharpe	4	4
Beane	2	2
Kaplan	1	2
MILC	10	11
Columbia	13	15
Karsch	3	4
BU	3	3
MIT	5	6
Maryland	3	3
CMU	3	5
Willam & Mary	3	4
Kentucky	3	3
	60	70

The increase of ten from last year to this year consisted of seven new PhDs, and a few earlier ones that were turned up that we had missed last year.

Suggestion #5: The current governance method is well-suited to achieving several goals: finding people for the EB and SPC who are well-qualified to lead, who are willing to expend the time and the energy necessary to do it, who have a vision of the field, and who are compatible in temperament and goals with the other members of the leadership team. However, the review panel noted that following present procedures the EC could turn over merely by replicating itself, thereby excluding the possibility that people with radically different, but useful ideas, could join the leadership team. The leadership might not be adequately sensitive to the opinions of the younger members of USQCD. However, in light of the success of USQCD in governing itself and the hardware project, the review panel does not think major changes are required. It does, however, urge USQCD leadership to continue to think about these issues and fine tune its governance processes accordingly.

We have considered both making the rotation process of the Executive Committee more regular and possible role of elections in Executive Committee rotations. The Executive Committee has been constituted so that it represents a balance between high-energy physics and nuclear physics, between the main areas of physics interest, and between the most important of the constituent physics collaborations. Rotations on the committee have been made to carefully maintain the desired balance.

Our recent policy has been to rotate at the rate of about one rotation per year with a view toward making a rotation of most of the committee over a period of about ten years, while maintaining the balance just described. This year, we have decided to make the terms of Executive Committee members more regular and predictable by reconsidering the membership of all committee members at the rate of two per year starting with the most senior. We have defined seniority by years served on the committee, and by years from PhD in the case of ties. We expect to continue to make approximately one rotation per year, as we have done for the last few years.

This procedure brought to consideration this year two of the most senior members of the Executive Committee, Bob Sugar of the MILC Collaboration and Norman Christ of the Riken-Brookhaven-Columbia Collaboration (RBC). The Executive Committee consulted with members of MILC and RBC, and these collaborations consulted among themselves on their representation on the committee. The result was that the Executive Committee has asked Norman Christ to continue on the committee and that Carleton DeTar of MILC and the University of Utah has been asked to replace Bob Sugar on the Committee. DeTar is in the middle of a term as chair of the University of Utah physics department and asked that the beginning of his service on the committee be deferred until his term as chair finishes in 2016. The EC has accepted that request.

Some of the members of the Executive Committee are distinguished physicists who do not represent large collaborations. The Executive Committee is considering other ways of making these rotations including elections at the All Hands Meeting.

Suggestion #6: The USQCD sponsored workshops have added to the impact and visibility of lattice calculations. It is important to continue and even expand these efforts, if possible. The US experimental program will be evolving rapidly over the next few years and the lattice community must continue to stay abreast of those developments. Participating in the Snowmass process, the upcoming new P5 process and related activities within HEPAP are all important here. Perhaps the lattice community should lobby for an increased role in DOE advisory committees such as HEPAP and NSAC.

We have continued to be active in organizing new workshops with experimenters and theorists, as shown in the slide “Lattice meets experiment meetings” in Paul Mackenzie’s talk at the annual review.

We were very active in the Snowmass process. Steve Gottlieb served as the co-convenor of the Computing Frontier section. Ruth Van de Water and Tom Blum were the Lattice Field Theory sub-conveners for the Computing Frontier, and Don Holmgren was the group’s monitor. T. Blum, R. S. Van de Water, D. Holmgren, R. Brower, S. Catterall, N. Christ, A. Kronfeld, J. Kuti, P. Mackenzie, E. T. Neil, S. R. Sharpe, and R. Sugar wrote the Lattice Field Theory report. Steve Sharpe, Norman Christ, and Van de Water were co-conveners of the LQCD task force in the quark-flavor WG. Van de Water, Jack Laiho, and Paul Mackenzie presented talks at the Summer Study.

Paul Mackenzie gave a presentation on the USQCD program to HEPAP at the Sept. 6, 2013 meeting, a meeting at which Steve Ritz of P5 was also in attendance.

Andreas Kronfeld was one of the two main editors (with Bob Tschirhart) of Fermilab’s Project X Book. Thomas Blum, Ruth S. Van de Water, Michael Buchoff, Norman H. Christ, Andreas S. Kronfeld, and David G. Richards wrote the Lattice QCD chapter.

There will be a town meeting on computational nuclear physics on July 14-15, 2014, at which David Richards, Martin Savage, and Frithjof Karsch will play leading roles. At the triennial NP-ASCR meeting 29/30 April 2014, Sergei Syritsyn presented topics in cold lattice nuclear physics which are expected to play increasingly important future roles in computational NP.