Los Alamos NATIONAL LABORATORY

Report of the Scientific Program Committee

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USQCD All hands meeting,
MIT,
4/20–21, 2023

Scientific Program Committee

- Tanmoy Bhattacharya (LANL) tanmoy@lanl.gov (Chair)
- Martha Constantinou (Temple) marthac@temple.edu
- George Fleming (FNAL) george.fleming@yale.edu
- Meifeng Lin (BNL) mlin@bnl.gov
- Sergey Syritsyn (SUNY) sergei.syritsyn@stonybrook.edu

Incoming:

- Peter Petreczky (BNL) petreczk@bnl.gov (Deputy Chair)
- James Simone (FNAL) simone@fnal.gov

Outgoing:

- Alexei Bazavov (Michigan State) bazavov@msu.edu
- Jack Laiho (Syracuse) jwlaiho@syr.edu

USQCD Resource changes for 2023–4

BNL computational resources retiring this FY:

- Used to be annual 60 M Sky-core-hours for Type A.
- Available only for the first quarter of allocation (Jul–Sep ’23).
- New acquisition in outer years.

FNAL new GPU cluster in the new FY:

- Provides annual 170 M Sky-core-hours for Type A
- Available for the last three quarters of allocation (Oct ’23–Jun ’24).
- Some friendly use in the first quarter.

New JLab resources expected in early ’24.

USQCD Computational Resources for 2023–4

Computational resources for Type A:

- 59M Skylake core-hours (4M BNL, 55M FNAL)
- 170M KNL core-hours (4M BNL,166M JLab)
- 0.5M A100 gpu-hours (FNAL)
- 0.3M K80 gpu-hours (BNL)
- 1.66M RTX2080 gpu-hours (JLab)
- 0.41M MI100 gpu-hours (Jlab)

BNL resources must be used this FY, JLAB GPU resources available next FY.

2022–3 USQCD CfP

- Allocations to be announced 31st May 2022
- Significant points:
  - Continued with google forms interface → google sheets.
  - Maintained “shortened” option for continuation proposals.
  - Junior investigators called out to apply
  - Proposal review criteria unchanged
- Long-term storage requirements unchanged:
  - Intended to stay through migration to new media
  - In the same CfP and with the same timeline as the computing call
  - Initial proposal needs detailed justification of value to USQCD
  - Need renewal every year with short statements

Proposals for 2023–4

- 26 Class-A Proposals
  - 26 in 2022–23, 30 in 2021–22, 30 in 2020–21, 31 in 2019–20
  - 24 continuation proposals, 2 new ones
  - More proposals on time this year (none seriously late)
- 2 Class-B Proposal in 2022–3 (Suggested maximum resources: 500K Skylake core-hours for computation and 6-month duration).
  - 5 in 2021-22, 5 in 2020–21, 1 in 2019–20, 3 in 2018–19
- Class C (suggested maximum resources: 20K Skylake core-hours/2K K80 gpu-hours).
  - BNL: Peter Boyle (pboyle@bnl.gov)
  - FNAL: Jim Simone (simone@fnal.gov)
  - JLab: Robert Edwards (edwards@jlab.org)

Distribution of class A by area (class B mainly HEP)

- HEP/NP – 11
  - 3 nEDM (Experiments: NP, Motivation: HEP)
  - 3 NME/FF (NP/HEP common use)
  - 4 Structure: TMD, PDF, GFF (Mostly NP, some HEP use)
  - 1 Scale-setting (mostly HEP)
- Energy Frontier (EF) – 3 ½
  - BSM, Gradient Flow, etc.
- Intensity Frontier (IF) – 6½
  - 1 QCD+QED
  - 5 ½ flavor physics, α_s etc.
- Cold NP – 4
- Hot QCD – 1

Distribution of Class A: By Resource

- Skylake: Request 122M, Available: 59M, Ratio: 2.05 (last year=1.88)
- KNL: Request 318M, Available: 170M, Ratio: 1.88 (last year=2.04)
- K80: Request 0.4M, Available: 0.3M, Ratio: 1.34 (last year=1.06)
- A100: Request 0.4M, Available: 0.5M, Ratio: 0.82
- RTX: Request 2.22M, Available: 1.70 M, Ratio: 1.30 (last year=1.29)
- MI100: Request 0.8M, Available: 0.4M, Ratio: 1.98 (last year=1.07)

GPUs less in demand than CPUs and KNLs (except Jlab 21g)

Some proposals can make use of multiple resources: not yet analyzed

Next Steps

- We will soon be sending questions out, please respond within a week!
- We will recommend allocations based on discussions covering:
  - scientific merit and timely impact on experimental programs
  - alignment with USQCD goals, and those of US HEP/NP programs
  - efficient use of resources
  - avoiding duplication of effort and redundancy
  - balance between HEP and NP
  - sustainability of project if cut
- Storage allocations are based on
  - broad need within USQCD
  - storage/compute costs and expected reuse valency
  - possibility of loss of data if allocations not made

Other Duties of the SPC

- Agenda of AHM
- Work with Site Managers and EC:
  - Efficient assigning of projects to resources
  - Jeopardy policies and implementation.
  - Respond to new/changes in resources throughout the allocation year.
- Work with EC on broader USQCD program
  - e.g. Snowmass, LRP, Whitepapers, reviews.
- Fulfill role of Nominating Committee for elected member of Executive Committee.

For this meeting

- Please upload your talk into Indico before the session if you are a speaker
- If you wish to ask question, or contribute to discussion:
  - For the scientific sessions, please wait until discussion time if possible
  - Use chat—to everyone
  - In general, not necessary to pose question in chat, just say you want to contribute
  - Chairman should call on you
- Please remember to “unmute” before speaking, and “mute” afterwards
- May need to turn off video if bandwidth becomes a problem