QCD town hall meeting

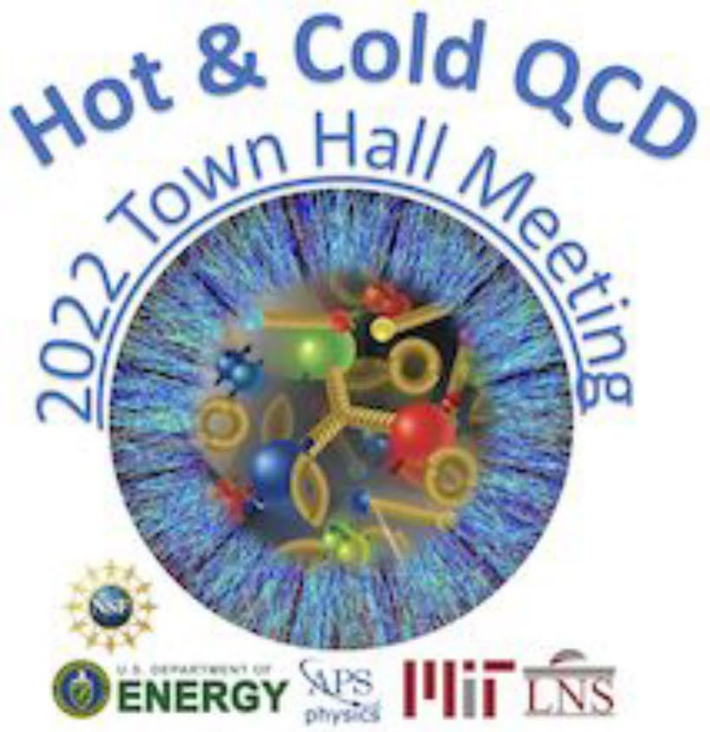
Y. Akiba

Indico: https://indico.mit.edu/event/538/

422 participants (182 in-person 240 remote)

Hot and Cold QCD Town Meeting, September 23-25, 2022, MIT

Ian Cloët (ANL)
Or Hen (MIT)
David Lawrence (JLab)
Wei Li (Rice)
Swagato Mukherjee (BNL)
Bjoern Schenke (BNL)
Anne Sickles (Illinois)
Ramona Vogt (LLNL & UCD)
Feng Yuan (LBNL)
Xiaochao Zheng (UVA)



Three days

9/23(Fri)

Morning	Plenary	EIC
Afternoon	Parallel	Cold QCD/Hot QCD
Evening	Plenary	Open Mic

9/24(Sat)

Morning	Parallel	Cold QCD/Hot QCD (both talks/open mic)
Afternoon	Plenary	
Evening	Plenary	

9/25(Sun)

Morning	Plenary	Discussion

Agenda (9/23 morning sessions on EIC)

08:00

LOC Welcoming — *Or Hen*
Stata Center, 32-123, MIT 08:30 - 08:37

MIT Dean of Science Welcome — *Nergis Mavalvala*
Stata Center, 32-123, MIT 08:37 - 08:42

Conveners Opening — *Feng Yuan*
Stata Center, 32-123, MIT 08:42 - 08:50

09:00

Diversity Equity and Inclusion in Nuclear Physics Collaborations — *Rosi Reed*
Stata Center, 32-123, MIT 08:50 - 09:20

EIC Project and Accelerator — *Rolf Ent*
Stata Center, 32-123, MIT 09:20 - 09:40

EIC ePIC Detector — *John Lajoie*
Stata Center, 32-123, MIT 09:40 - 10:00

10:00

EIC Generic R&D Program — *Thomas Ullrich*
Stata Center, 32-123, MIT 10:00 - 10:15

Discussion
Stata Center, 32-123, MIT 10:15 - 10:30

Coffee Break
Stata Center, 32-123, MIT 10:30 - 11:00

11:00

EIC Science: ep Reactions — *Hatta Yoshitaka*
Stata Center, 32-123, MIT 11:00 - 11:15

EIC Science: eA Reactions — *Anna Stasto*
Stata Center, 32-123, MIT 11:15 - 11:30

EIC Theory Workshop Summary — *Iain Stewart*
Stata Center, 32-123, MIT 11:30 - 11:33

Discussion
Stata Center, 32-123, MIT 11:33 - 11:45

Lattice theory for Hot and Cold QCD — *Martha Constantinou*
Stata Center, 32-123, MIT 11:45 - 12:05

12:00

Machine Learning and Artificial Intelligence Applications for QCD (exp) — *Cristiano Fanelli*
Stata Center, 32-123, MIT 12:05 - 12:20

Machine Learning and Artificial Intelligence Applications for QCD (theory) — *Phiala Shanahan*
Stata Center, 32-123, MIT 12:20 - 12:35

Discussion
Stata Center, 32-123, MIT 12:35 - 12:50

Lunch (on your own)

13:00

Agenda (9/23 afternoon parallel sessions)

14:00

Stata Center, 32-123, MIT 12:50 - 14:20

Open questions in cold QCD *Xiangdong Ji*
Stata Center, 32-123, MIT 14:20 - 14:40

Nucleon Spin Structure from global analysis
Werner Vogelsang

RHIC highlights and future I *Megan Connors*
Stata Center, 32-155, MIT 14:20 - 14:45

Jet theory *Abhijit Majumder*
Stata Center, 32-155, MIT 14:45 - 15:10

15:00

Nucleon Spin Structure at Low-x *Yuri Kovchegov*
Stata Center, 32-123, MIT 15:00 - 15:20

3D Structure of Hadrons probed with Electrons and Positi
Carlos Munoz Camacho

RHIC highlights and future II *Prithwish Tribedy*
Stata Center, 32-155, MIT 15:10 - 15:35

TMD: Theory and Measurements *Zhongbo Kang*
Stata Center, 32-123, MIT 15:40 - 16:00

Flow and transport properties *Jean-Francois Paquet*
Stata Center, 32-155, MIT 15:35 - 16:00

16:00

The High Intensity Gamma Source *Calvin Howell*
Stata Center, 32-123, MIT 16:00 - 16:20

Lattice QCD for RHIC and LHC *Peter Petreczky*
Stata Center, 32-155, MIT 16:00 - 16:20

Coffee Break
Stata Center, 32-123, MIT 16:20 - 16:50

Final recommendations

Recommendation 1: Capitalizing on past investments

The highest priority for QCD research is to maintain U.S. world leadership in nuclear science for the next decade by capitalizing on past investments. Maintaining this leadership requires recruitment and retention of a diverse and equitable workforce. We recommend support for a healthy base theory program, full operation of the CEBAF 12-GeV and RHIC facilities, and maintaining U.S. leadership within the LHC heavy-ion program, along with other running facilities, including the valuable university-based laboratories, and the scientists involved in all these efforts.

Recommendation 2: EIC Project

We recommend the expeditious completion of the EIC as the highest priority for facility construction.

Recommendation 3: Workforce and Conduct

Recommendation 4: Computing

High-performance and high-throughput computing are essential to advance nuclear physics at the experimental and theory frontiers. Increased investments in computational nuclear physics will facilitate discoveries and capitalize on previous investments.

Initiatives

EIC Detector-2 Initiative

CEBAF Positron Program Initiative

CEBAF Energy Upgrade Initiative

U.S. Participation in LHC Detector Upgrades and Partnership with CERN Initiative

Exploring opportunities for US participation in international facilities at the high baryon density frontier

Nuclear Data Initiative

QCD Town Hall Final R&I and next step

- Full text of the recommendations, initiatives, and their vote results are in “QCD Town Hall Rinal R&I” slides

https://indico.mit.edu/event/538/contributions/1254/

NEXT STEP

- White paper(s) of QCD will be written
  - — But there is some confusion. There are several QCD white papers planned now…
  - — Target date: January 2023

- GOAL of the white paper

Ensure RHIC running in 2023-25

Goals of the last LRP is achieved

Support to RHIC physics after 2025

-- complete the analysis

-- data/analysis preservation effort

Connection to the EIC physics

-- bridge the HI and EIC community together

==== How to proceed

Joint Meeting with PHENIX/STAR/sPHENIX on the white paper before the QCD town meeting (9/23-25)

Q: who attend the joint meeting from PHENIX