

Workshop on Future Opportunities in QCD

Dec.15-16, 2006

SURA Office, 1201 New York Avenue, NW, Washington, DC 20005

Supported by SURA office, BNL and Jefferson Lab

Organizers: Xiandong Ji (Maryland)
Larry McLerran (BNL)
Berndt Mueller (Duke)
Tony Thomas (JLab)

Dec. 15

Morning 08:50-09:00 Remarks by organizers

Hadron Structure Session

Discussion Leader: R. Ent

09:00 - 09:30 Key Issues in Proton Structure, Naomi Makins

09:30 - 10:10 Proton Structure: Open Questions, Challenges and Opportunities (I): Werner Vogelsang

Proton Structure: Open Questions, Challenges and Opportunities (II): Marc Vanderhaeghen

10:10 - 10:20 Challenges in Spin Physics at Small x : Abhay Deshpande

10:20 - 10:30 How do Quarks Convert into Hadrons? George Sterman

10:30 - 11:00 Break

11:00 - 11:10 How Can Lattice QCD Complement Experiment? John Negele

11:10 - 11:20 What is the Interplay between Experiment, LQCD and Phenomenology? Carl Carlson

11:20 - 11:30 Which part of the GPD/TMD Program Will Obtain Definite Answers with the 12-GeV Upgrade, and Which Questions Will Require a Dedicated EIC Collider? Michel Guidal

11:30 - 12:00 General Discussion on Key Issues and Opportunities for the Next Decade Richard Milner

12:00 - 12:30 Discussion of the Draft Summary Write-Up Rolf Ent

12:30-2:00 Lunch

Afternoon: QCD at High-T

Discussion Leader: Xin-Nian Wang

2:00 Remarks by Xin-Nian Wang

2:05 (20+10) Krishna Rajagopal: Probing the properties of quark-gluon plasma

2:35 (20+10) Axel Dress: High T and density QCD in the BNL QCD Lab era

3:05 (5+5) Frithjof Karsh: Challenges for lattice QCD at finite temperature and density

3:15 (5+5) Rainer Fries: Precision probes for hot QCD matter

3:25 (5+5) Edward Shuryak: Summary of transport properties of sQGP

3:35-4:05 Break

QCD at High-T Session II

4:05 (5+5) Ivan Vitev: Toward consistent many-body QCD description of heavy-ion reactions

4:15 (5+5) Peter Jacobs: Jet quenching at RHIC and LHC

4:25 (5+5) Thomas Ullrich: Heavy Ions at RHIC - RHIC-II and beyond

4:35 (5+5) Misha Stephanov: Some comments

4:45–5:30 Discussions & Comments & Draft recommendation

6:30-9:00 Dinner

Dec. 16

Morning: QCD at High-Energy

Discussion Leader: Raju Venugoplan

9:00-9:10 Peter Paul (10 minutes): Introduction and historical perspective on small-x physics in the context of collider physics at DESY, CERN and possible EIC.

9:10-9:40 Yuri Kovchegov (20+5 minutes): Theory Overview

9:40-10:10 Carl Gagliardi (20+5 minutes): Experimental Overview

10:10-10:24 Henri Kowalski (10+4 minutes): What have we learnt from HERA about small x and what are the lessons/open questions for future facilities ?

10:24-10:55 Coffee Break

10:55-11:09 Dima Kharzeev (10+4 minutes): What have we learned from RHIC about small x physics and what are the lessons/open questions for future facilities ?

11:09-11:23 Mark Strikman (10+4 minutes): What are the interesting measurements at future colliders and what can one learn from them ?

11:23-11:37 Bernd Surrow (10+4 minutes): Which of these measurements can be studied at a future Electron-Ion Collider and with what accuracy?

11:37-11:51 Brian Cole (10+4 minutes): Which of these these measurements can be studied at future D-A/pA colliders at BNL/CERN and with what accuracy ?

11:51-12:05 Jianwei Qiu (10+4 minutes): Are pA and eA collisions identical or complementary ? What can we learn about factorization and universality in QCD from electron-ion and hadron-hadron colliders ?

12:05-12:30 Final comments and draft recommendation

12:30-2:00 Lunch

Afternoon: Hadron Spectroscopy

Discussion Leader: T. Barnes

2:00-3:30 Theoretical overview E. Swanson 30 minutes
Lattice gauge theory D. Richards 15 minutes
Experimental overview Curtis Meyer 30 minutes

3:30-4:00 Break

4:00-5:30 Discussion and draft recommendation

List of Participants (In Random order)

M. Vanderhaeghen
W. Vogelsang
R. Ent
Carl Carlson
Abhay Desphande
Michel Guidal
Naomi Makins
John Negele
G. Sterman
R. Milner
A. Szczepaniack
T. Barnes
C. Meyer
Simon Capstick
Eric Swanson
Colin Morningstar
Jim Napolitano
L. Cardman
Yuri Kovchegov
Raju Venugopalan
Carl Gagliardi
Brian Cole
Henri Kowalski
Dmitri Kharzeev
Jianwei Qiu
Mark Strikman
Xin-Nian Wang
Misha Stephanov
Axel Drees
Krishna Rajagopal
Edward Shuryak
Thomas Ullrich
Ivan Vitev
Frithjof Karsch
Peter Jacobs
Rainer Fries