Scientific Program of
Quark Matter 2004

Marriott City Center, Oakland
January 11- 17, 2004

Sunday, January 11

Student and Junior Researcher Program (Calvin Simmons Ballroom A)

Morning	Chair – *T. Ullrich*	
9:00 AM -10:00 AM		Perturbative QCD in Nuclear Environment –*J. Qiu*
10:00 AM-11:00 AM		Heavy-ion Experiments and Detectors – *J. Thomas*
11:00 AM-11:30 AM		Coffee Break
11:30 AM–12:30 PM		QCD in Hot and Dense Matter: *K. Rajagopal*
12:30 PM-2:30 PM		Lunch Break
Afternoon	Chair – *J. Thomas*	
2:30 PM-3:30 PM		Experimental Probes of QGP I: *T. Ullrich*
3:30 PM–4:30 PM		QCD and Heavy-ion Collisions – *R. Venugopalan*
4:30 PM–5:00 PM		Coffee Break
5:00 PM-6:00 PM		Experimental Probes of QGP II: *J. Nagle*

High School Science Teacher Program (Room 208)

12:00 PM Open for registration
12:30 PM Lunch for all participants
1:30 PM Workshop

- From the Greek elements to modern physics– *Horst Stocker*, Professor of Physics, University of Frankfurt, Germany
- Modern Particle Accelerators Detectors: A Household Survey – *Carl Gagliardi*, Professor of Physics, Texas A & M University
- Particles, nuclei and the cosmos – *Gary Westfall*, Professor of Physics, Michigan State University
- The nucleus at a trillion degrees - *David Morrison*, Staff Scientist, Brookhaven National Laboratory
- Round table discussion with graduate students and recent Ph.D.'s.- *Eugene Yamamoto, Jennifer Klay, Sevil Salur, Mike Miller*

5:00 PM Teachers Program concludes

4:30 PM – 8:00 PM	Conference Registration (the registration will be available during the conference)
6:30 PM – 9:00 PM	Reception (Jewett Ballroom)

Monday, January 12

Morning
9:00 AM – 9:10 AM **Opening**
Overviews: Chair – *B. Mueller*
9:10 AM – 9:55 AM Heavy-ion Physics: From Bevalac to LHC – *R. Stock*
9:55 AM – 10:40 AM Theoretical Overview – *U. Wiedemann*

10:40 AM – 11:10 AM Coffee Break

Overviews: Chair – *H. Gutbrod*
11:10 AM – 11:55 AM Experimental Overview – *T. Hemmick*
11:55 AM – 12:30 PM Diquarks, Tetraquarks and Pentaquarks– *R. Jaffe*

12:30 PM – 2:30 PM Lunch Break

Afternoon
Experimental Highlights: Chair: *J. Stachel*
2:30 PM – 3:00 PM BRAHMS – *M. Murray*
3:00 PM – 3:30 PM PHENIX – *T. Frawley*
3:30 PM – 4:00 PM PHOBOS – *P. Steinberg*

4:00 PM - 4:30 PM Coffee Break

Experimental Highlights: Chair: *G. Young*
4:30 PM – 5:00 PM STAR – *K. Schweda*
5:00 PM – 5:30 PM NA49 – *M. Gazdzicki*
5:30 PM – 6:00 PM CERES – *A. Marin* .
6:00 PM – 6:20 PM NA57 – *G. Bruno*

Tuesday, January 13

Morning
Particle Production and QCD: Chair - *H. A. Gustafsson*
9:00 AM – 9:30 AM Bulk Properties of Particle Production – *G. Roland*
9:30 AM-10:00 AM Strangeness Production – *F. Antinori*
10:00 AM-10:30 AM QCD from String Theory – *J. Polchinski*

10:30 AM -11:00 AM Coffee Break

Particle Production and Gluon Saturation: Chair – *I. Tserruya*
11:00 AM – 11:25 AM Resonance Production – *P. Fachini*
11:25 AM-11:50 AM Comments on Particle Production in p+p, p+A and A+A– *A. Rybicki*
11:50 AM -12:20 PM Gluon Saturation & Initial Distribution – *J. Jalilian-Marian*
12:20 PM -12:40 PM High p_T Hadron Spectra at Large Rapidity - *R. Debbe*

12:40 PM – 2:30 PM Lunch Break
Afternoon
2:30 PM – 5:00 PM Parallel Sessions
5:00 PM – 6:30 PM Poster Sessions with refreshments

Wednesday, January 14

Morning
High pt Hadrons and Jets: Chair – *B. Jacak*
9:00 AM – 9:30 AM Jet Correlations – *M. Miller*
9:30 AM- 10:00 AM High pt Hadron Spectra – *D. d'Enterria*
10:00 AM-10:30 AM Parton Energy Loss and EM Emission from QGP – *G. Moore*

10:30 AM -11:00 AM Coffee Break

Jet Quenching: Chair – S. *Steadman*
11:00 AM-11:30 AM Jet Suppression in DIS (HERMES) –*P. Di Nezza*
11:30 AM-12:00 PM Jet Tomography – *I. Vitev*
12:00 PM-12:20 PM Parton Energy Loss vs Hadron Absorption – *C. Greiner*
12:20 PM -12:40 PM High p_T D* and D^+ production in d+Au collisions at 200 GeV - *A. Tai*

12:40 PM Lunch
Afternoon
Excursions

Thursday, January 15

Morning
Correlations and Fluctuations: Chair – *J. Harris*
9:00 AM – 9:30 AM Fluctuations & Correlations – *J. Mitchell*
9:30AM-10:00 AM HBT – *D. Magestro*
10:00 AM-10:30 AM Collective Flow – *F. Retiere*

10:30 AM -11:00 AM Coffee Break

Fragmentation, Recombination and Hydro: Chair – *B. Sinha*
11:00 AM-11:30 AM Identified Hadron Spectra in pp, dA and AA - *J. Velkovska*
11:30 AM-12:00 PM Hydrodynamic Models – *T. Hirano*
12:00 PM-12:30 PM Recombination Models – *R. Fries*

12:30 PM – 2:00 PM Lunch Break

Afternoon
2:00 PM – 3:40 PM Parallel Sessions
3:40 PM – 4:10 PM Coffee Break
4:10 PM – 5:50 PM Parallel Sessions

Friday, January 16

Morning

Heavy Quarks and Neutron Stars: Chair – *W. Busza*

9:00 AM – 9:30 AM	J/Ψ and Open Charm – *M. Brooks*
9:30 AM –10:00 AM	Quarkonia Production with the HERA-B Experiment –*J. Spengler*
10:00 AM-10:30 AM	Neutron Stars, Supernovae, and Phases of Matter – *S. Reddy*
10:30 AM – 11:00 AM	Coffee Break

Physics at High energy, Temperature and Density: Chair – *T. Hatsuda*

11:00 AM-11:30 AM	News from Lattice QCD – *F. Karsch*
11:30 AM – 12:00 PM	Physics of High Baryon Density – *B. Friman*
12:00 PM – 12:30 PM	Heavy-Ion Physics at LHC – *Y. Schutz*
12:30 PM – 2:00 PM	Lunch Break

Afternoon

2:00 PM – 4:00 PM	Parallel Sessions
4:00 PM-4:30 PM	Coffee Break

Opinions and Perspectives: Chair – *J. Schukraft*

4:30 PM – 5:00 PM	What have we learned so far: An Experimental Perspective – *M. Lisa*
5:00 PM – 5:30 PM	What have we learned so far: A Theoretical Perspective – *M. Gyulassy*
5:30 PM – 6:00 PM	What is missing and what needs to be done – *P. Braun-Munzinger*
7:00 PM	Banquet

After Dinner Talk: The Death of the Dinosaurs ... 25 years later – *R. Muller*

Saturday, January 17

Morning

Rapporteur-Conference Highlights: Chair – *L. Kluberg*

9:00 AM – 9:30 AM	High p_T & Jets – *K. Filimonov*
9:30 AM – 10:00 AM	Bulk Properties and Collective Flow – *Zhangbu Xu*
10:00 AM–10:30 AM	Correlations and HBT - *H. Appelshauser*
10:30 AM – 11:00 AM	Coffee Break

Rapporteur-Conference Highlights: Chair – *P. Levai*

11:00 AM–11:30 AM	Leptons, Photons and Heavy Quarks – *R. Averbeck*
11:30 AM – 12:00 PM	Theory Highlights – *R. Rapp*
12:00 PM	Adjourn

Parallel Program

Tuesday, January 13 (2:30 PM -5:00 PM)	
Parallel 1: High Pt Spectra Chair - *F. Liu* Exhibit Hall West	
M. A. C. Lamont (20)	Identified particle ratios at large p_T in Au+Au collisions at 200 GeV
A. Accardi (20)	Cronin Effect versus Geometrical Shadowing in d+Au Collisions at RHIC
C. Klein-Boesing (20)	Neutral Pions and Charged Hadrons with Large Transverse Momentum in Au+Au and d+Au Collisions At 200 GeV
Y. Kovchegov (20)	Cronin Effect and High-p_T Suppression in p(d)A Collisions
Z. Yin (20)	High p_T spectra of protons and charged pions in Au+Au and d+Au collisions at 200 GeV
K. Itakura (20)	Saturation and BFKL dynamics in the HERA data at small x
R. Venugopalan (20)	Initial and final state effects in the melting color glass condensate
B. Povh (10)	From small gluonic spots in nucleons to weak gluon shadowing in nuclei
Parallel 2: EM Probes Chair - *C.-M. Ko* Calvin Simmons Ballroom A	
J. Frantz (20)	Direct Photons in RHIC AuAu and p-p Collisions with PHENIX
A. Cherlin(20)	Preliminary results from the 2000 run of CERES on low-mass e^+e^- pair production in Pb-Au collisions at 158 A GeV
C. Gale (20)	Electromagnetic signatures of jets
R. Seto (20)	Light Vector Mesons in dAu and pp Collisions at RHIC
R. Muto (20)	Experimental signature of in-medium mass modification of vector mesons at normal nuclear density
P. Sonderegger(20)	Accurate measurements of dimuon production in proton-nucleus and heavy-ion collisions: the NA60 experiment
H. Niemi (20)	Photon Production from Non-equilibrium QGP in Heavy-ion Collisions
X.-F. Zhang (10)	Probing small-x gluons by low mass Drell-Yan pairs at RHIC/LHC
Parallel 3: HBT Chair - *T. Csorgo* Calvin Simmons Ballroom B	
M. Heffner (20)	Two-particle interferometry of 200 GeV Au+Au collisions at Phenix
B. Holzman (20)	Rapidity, k_T, and centrality dependence of HBT correlations in Au+Au collisions at 200 GeV
C-Y Wong (20)	Does HBT measure the freezeout source distribution?
A. Kisiel (20)	Non-identical particle correlations in 130 and 200 AGeV collisions at STAR
D. Peressounko(20)	Interferometry of direct photons in central Pb+Pb collisions at 158 AGeV
J. Kapusta (20)	Multiple Scattering Effects on HBT Interferometry
S. Kniege (20)	Rapidity and transverse momentum dependence of pion-pion Bose-Einstein correlations measured at 20,30,40,80 and 158 AGeV beam energy
Mate Csanad (10)	Indication for deconfinement and evidence for a Hubble flow in Au+Au

Parallel 4: Instrumentation and Future Experiments Chair -*C. Fabjan* Room 208	
A. David (20)	Pioneering aspects of NA60 detectors
P. Senger(20)	The Compressed Baryonic Matter Experiment at the Future Accelerator Facility in Darmstadt
V. Manzari (20)	The Silicon Pixel Detector for the ALICE experiment
A. Vestbo (20)	The ALICE High Level Trigger
P. Glassel (20)	The ALICE TPC -- an innovative device for heavy ion collisions at LHC
H. Takai (20)	ATLAS at LHC
A. Drees (30)	The RHIC Upgrade Program
Thursday, January 15 (2:00 PM - 5:50 PM with a break between 3:40 PM and 4:10 PM)	
Parallel 1: Hadron spectra Chair - *H-F. Chen* Exhibit Hall West	
F. Matathias (20)	π/K/p production and Cronin effect from p-p, d-Au and Au-Au at 200 GeV
R. C. Hwa (20)	Fragmentation or Recombination at High p_T?
L. Barnby (20)	Production of ϕ, K^0_s and Λ and Particle Dependence of Nuclear Modification Factors from d+Au collisions at RHIC
G. G. Barnafoldi (20)	Cronin Effect in d+Au Collisions at RHIC energies
D. Ouerdane (20)	Rapidity dependence of charged pion and kaon production in central Au+Au collisions at 200 A GeV
Break (30)	
	Chair - *T. Ludlam*
R. Nouicer (20)	Centrality Dependence of Charged Particle Pseudorapidity Distributions in d + Au Collisions at 200 GeV
Y. Nara (20)	CGC, hydrodynamics and the parton energy loss
G. I. Veres (20)	Identified Hadron Spectra from PHOBOS
B. Wyslouch (20)	Heavy Ion Physics with the CMS detector at the LHC
S.-L. Blyth (20)	Jet study in ultra-relativistic heavy-ion collisions with the ALICE detector at the LHC
Parallel 2: Heavy Quark Production and Propagation Chair - *B. Povh* Calvin Simmons Ballroom A	
J. Raufeisen (20)	Heavy Quark Production and Gluon Shadowing at RHIC and LHC
A. Gorisek (20)	Strange and charmed particle production at mid-rapidity with the HERA-B
K. Tuchin (20)	Heavy quark production from Color Glass Condensate at RHIC.
V. J. Kolhinen (20)	Enhancement of charm quark production due to nonlinear corrections to the DGLAP equations
H. Santos (20)	The production of ψ' in Lead-Lead collisions at 158 GeV/c per nucleon incident momentum

Break (30)	
	Chair - *P. Seyboth*
A. A. P. Suaide (20)	Inclusive electron distributions at high pT in d+Au and p+p collisions at RHIC
M. Djordjevic (20)	Heavy quark energy loss to all orders in opacity
S. Kelly (20)	Charm Production in Au-Au, d-Au and p-p Reactions
M.- X. Liu (20)	Muon production in forward and backward rapidity in d-Au collisions measured by the PHENIX experiment
L. Ruan (20)	Open charm production and Cronin Effect of leptons and identified hadrons in p+p and d+Au collisions at 200GeV at STAR
C. Pinkenburg(10)	Pentaquark in PHENIX
Parallel 3: Collective Flow **Chair - *H. Stöcker*** Calvin Simmons Ballroom B	
J. Castillo (20)	Elliptic flow of multi-strange baryons Ξ , Ω in Au+Au collisions at 200 GeV
N. Borghini (20)	Anisotropic flow from Lee-Yang zeroes
M. Kaneta (20)	Event anisotropy of identified π^0, photon and electron compared to charged π, K, proton and deuteron
E. Shuryak (20)	Why does the QGP behave like a perfect fluid?
A. Poskanzer(20)	Azimuthal Anisotrpy: the higher harmonics
Break (30)	
	Chair - *R. Snellings*
U. Heinz(20)	Rapidity dependence of momentum anisotropies in nuclear collisions
A. Tang (20)	Directed and Elliptic Flow in Au+Au collisions at 200 GeV and azimuthal correlations in p+p and d+Au collisions at 200 GeV
D. Molnar (20)	Particle correlations at RHIC and parton coalescence dynamics
M. B. Tonjes (20)	Flow in Au+Au collisions at RHIC
D. Teaney (20)	Viscosity and Thermalization
Parallel 4: QCD Theory **Chair - *R. Pisarski*** Room 208	
K. Rajagopal (20)	Gapless Color-Flavor Locked Quark Matter
Q. Wang (20)	Recent developments in weak coupling color superconductivity
A. Mocsy (20)	Linking Deconfinement and Chiral Symmetry Restoration
P. Petreczky (20)	Phase diagram of QCD with HYP staggered fermions
K. Fukushima (20)	Relation between color deconfinement and chiral restoration
Break (30)	
	Chair - *J. Cleymans*
I. Zahed (20)	The Quark-Gluon Plasma at Strong Coupling
K. Redlich (20)	Heavy Ion Collisions and Lattice QCD at Finite Baryon Denisty
G. E. Brown (20)	The Instanton Molecule Liquid and ``Sticky Molasses" Above T_c
M. Prakash (20)	Mergers of binary stars: The ultimate heavy-ion experience
S. A. Bass (20)	RHIC Physics with the Parton Cascade Model

Friday, January 16 (2:00 PM - 4:00 PM)	
Parallel 1: High Pt Jets Chair - *P. Paul* Exhibit Hall West	
T. W. Henry (20)	Jet Distributions in d+Au and p+p Collisions at STAR
A. Sickles (20)	Identified Particle Angular Correlations in p+p, d+Au, and Au+Au at RHIC
C. A. Salgado (20)	Medium Modification of the Jet Properties
F. Wang (20)	Measurement of Jet Fragmentation at RHIC
A. Majumder (20)	Dihadron fragmentation functions and high Pt hadron-hadron correlations
J. Rak (20)	Measurement of jet properties and their modification in heavy-ion collisions
Parallel 2: Strangeness Production Chair - *H. Hamagaki* Calvin Simmons Ballroom A	
C. Markert (20)	Strange Baryon Resonance Production in p+p, d+Au and Au+Au collisions at RHIC energies
D. Kotchetkov (20)	Study of Ks and rho produced in p-p and d-Au collisions and Lambda and Lambda-bar produced in Au-Au collisions at 200 GeV at PHENIX
W. Florkowski (20)	Production of resonances in a thermal model: Invariant-mass spectra and balance functions
C. Meurer (20)	Energy dependence of Ξ and Ω production in Pb+Pb collisions at CERN SPS
D. Elia (20)	Energy dependence of K^0_s and hyperon production at CERN SPS
R. V. Gavai (20)	The Wroblewski parameter from Lattice QCD
Parallel 3: Quarkonium and Exotic Baryons Chair - *D. Kharzeev* Calvin Simmons Ballroom B	
M. Asakawa (20)	J/ψ and η_c in the Deconfined Plasma from Lattice QCD
R. G. de Cassagnac(20)	J/ψ Production and Nuclear Effects for d-Au and p-p Collisions at RHIC
S. Datta (20)	Quarkonia spectral functions above deconfinement
G. Borges (20)	New Results on charmonia absorption at the CERN/SPS
L. Grandchamp(20)	In-Medium Effects on Charmonium Production in Heavy-Ion Collisions
K. Kadija (20)	Search for exotic baryon resonances in pp and PbPb collisions with the NA49
K.-T. Knoepfle (10)	Pentaquark in HERA-B
Parallel 4: Fluctuations and Correlations Chair - *Y. Viyogi* Room 208	
M. Tannenbaum (20)	Event-by-Event $\langle p_T \rangle$ Fluctuations in Au+Au and p+p Collisions: PHENIX Measurements and Suppressed Jet Contributions
H. Sako (20)	Event-by-Event Fluctuations at 40, 80, and 158 AGeV/c in Pb+Au Collisions
K. Wozniak (20)	Charged-Particle Fluctuations in 200 GeV Au+Au Collisions
C. Roland (20)	Event-by-event fluctuations of particle ratios in central Pb+Pb collisions at beam energies of 20 to 158 GeV/Nucleon
S. Gavin (20)	Traces of Thermalization from Fluctuations at RHIC
G. Westfall (20)	Correlations and Fluctuations in STAR