# NATHAN CONRAD GRAU
# Curriculum Vitae
# November 2010

## CONTACT

Department of Physics
Augustana College
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## EDUCATION

August 2000 – December 2005

Ph. D. Nuclear Physics, Iowa State University, Ames, IA

August 1996 – May 2000

B.S. Physics, Millikin University, Decatur, IL
Minor degrees in Astronomy and Mathematics

## EMPLOYMENT

September 2010 – present

Visiting Assistant Professor Augustana College, Sioux Falls, SD

August 2009 – May 2010

Adjunct Faculty Columbia University, New York, NY

January 2006 – July 2010

Postdoctoral Research Scientist, Experimental Nuclear Physics
Supervised by Dr. Brian Cole
Columbia University, Nevis Laboratories, Irvington, NY

January 2005 – August 2005

Adjunct Faculty
Des Moines Area Community College, Ankeny, IA

May 2002 – December 2005

Research Assistant, Experimental Nuclear Physics
Under Dr. Craig Ogilvie
Iowa State University, Ames, IA

August 2000 – May 2002, August – December 2003

Teaching Assistant
Iowa State University, Ames, IA

May 2000 – July 2000

Summer Research Assistant
Argonne National Laboratory, Argonne, IL

August 1997 – May 2000

Teaching and Research Assistant
Millikin University, Decatur, IL

## COMPUTER SKILLS

Proficient in C/C++, ROOT, Python, Perl, csh and bash, HTML, XML, LaTeX

## MEMBERSHIPS AND HONORS

Honorable Mention, RHIC-AGS Thesis Award Competition, 2007
Graduate Teaching Excellence Award, 2001
American Physical Society
Sigma Pi Sigma Honors Society
Sigma Zeta Honors Society

## TEACHING EXPERIENCE

Augustana College

Instructor for undergraduate major and non-major courses including a survey of physics course, modern physics, analytical mechanics, thermodynamics, and intermediate and advanced laboratory courses.

Columbia University

Lecturer for the engineering laboratory course

Des Moines Area Community College

Instructor for algebra-based physics course

Iowa State University

Recitation instructor for calculus-based and algebra-based physics courses
Recitation instructor for introductory astronomy course
Lab instructor for "Physics of Music" course

Millikin University

Lab assistant for calculus-based physics course
Lab assistant for and algebra-based physics course
Teaching and Lab assistant for introductory astronomy courses

# RESEARCH EXPERIENCE

Augustana College

Participated on the PHENIX Experiment
Mentored undergraduate research projects on PHENIX

Columbia University

Participated on the PHENIX experiment
Analysis Train Conductor - the individual responsible for running, monitoring, and maintaining the infrastructure for users to have access to PHENIX data for analysis
Member of the hard scattering/photon and light meson/heavy flavor physics groups
Advised and aided a graduate student thesis topic on charm and bottom correlated production in p+p collisions using PHENIX data
Mentored two undergraduate senior projects and two summer students
Participated in the start up of the ATLAS heavy ion physics program
Chaired the group responsible for jet reconstruction in heavy ion collision at ATLAS
Developed and maintained the heavy ion jet reconstruction code
A lead author for a US Department of Energy proposal for funding for the US ATLAS heavy ion effort

Iowa State University

Participated on the PHENIX experiment
Member of the hard scattering/photon physics working group
Participated in Level-2 trigger development
Resurrected a hadronic calorimeter used in the experiment for centrality determination in $p + A$ collisions
Thesis topic represented the first systematic study of jet properties in $p + p$, $d + Au$, and $Au + Au$ including quantifying the nuclear matter effects in $d + Au$ and $Au + Au$ compared to $p + p$

Argonne National Laboratory

Set up a Linux cluster for use for parallel analysis of 3-dimensional image data from an experiment at the Advanced Photon Source

Millikin University

Studied non-carbon aromatic bonding by modeling macromolecular drugs
Studied the stability of planetary systems with multiple "Hot Jupiter" planets

# SERVICE/RESPONSIBILITIES

June 2009 – present

PHENIX Analysis Train Conductor - individual responsible for running, monitoring, and maintaining user access to PHENIX data

January 2007 – May 2010

Chair of ATLAS heavy ion jet reconstruction group

June 2006 – May 2010

ATLAS package manager for heavy ion jet reconstruction code

February 2010

Chair of session "Soft and Hard Interactions at RHIC" for the American Physical Society April Meeting

June 2009

Co-chaired a day-long workshop on high-$p_T$ probes in p+p and A+A collisions at the RHIC-AGS Users' Meeting.

February 2009

Chair of the Internal Review Committee for the PHENIX paper "Photon-Hadron Jet Correlations in p+p and Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV" **arXiv:0903.4851** submitted for publication in Phys. Rev. **C**.

January 2008 – March 2008

Chair of the Internal Review Committee for the PHENIX paper "Dihadron azimuthal correlations in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV" Phys. Rev. **C78** 014901 (2008)

April 2007 – November 2007

Member of the Internal Review Committee for the PHENIX paper "Enhancement of the dielectron continuum in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions" **arXiv:706.3034** submitted for publication in Phys. Rev. Lett.

May 2004 – January 2006

Member of the Paper Preparation Group for the PHENIX paper "Jet structure from dihadron correlations in d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV" Phys. Rev. **C73** 054903 (2006)

October 2002 – April 2003

PHENIX Level-2 Trigger Expert

# THESIS TOPIC

A major purpose of the RHIC program is to study QCD at high temperatures and densities. This has been achieved by the systematic study of collisions from $p+p$ to $d+Au$ to $Cu+Cu$ and $Au+Au$ at different energies. The study of $d+Au$ and $p+p$ collisions yields understanding of initial state phenomena and provides a baseline for measurements in $Cu+Cu$ and $Au+Au$ collisions. One of the most interesting results from the first few years of RHIC running is the apparent jet quenching in central $Au+Au$ collisions as measured by single inclusive hadrons. This is in contrast to the enhancement of single inclusive hadrons in $d+Au$ collisions. Complementary observables to these inclusive results are measurements of jet properties via dihadron correlations. From these dihadron correlations one can extract $j_T$, the fragments transverse momentum with respect to the jet axis, $k_T$, the average net parton transverse momentum, and associated particle jet yields as a function of $x_E$. These jet properties from different nuclear collisions are presented to systematically determine the cold and hot nuclear medium effects on jets. Their relationship to other measurements and theoretical work is also discussed.

## THESIS DEFENSE DATE

November 21, 2005

## CONTRIBUTED AND INVITED TALKS

1. RHIC-AGS User's Meeting, June 2010
   Brookhaven National Laboratory
   "Experimental Overview of Two-Particle Correlations"

2. Recontres de Moriond, March 2010,
   La Thuile, Italy
   "Jet energy loss at RHIC"

3. APS April Meeting 2010, February 2010,
   Washington, D.C.
   "Cold Nuclear Matter Effects on Jets in PHENIX"

4. Joint APS/JPS Division of Nuclear Physics Meeting, October 2009
   Kailua-Kona, HI
   "Jet Reconstruction in $d + Au$ Collisions at RHIC-PHENIX"

5. Quark Matter, April 2009
   Knoxville, TN
   "Elucidating Jet Energy Loss Using Jets: Prospects from ATLAS"

6. High-$p_T$ at LHC, February 2009
   Prague, Czech Republic
   "Details of Jet Reconstruction and Their Impact on Jet Quenching Measurements"

7. Colloquium Francis Marion University, January 2009
   Florence, SC
   "The Little Big Bang: Relativistic Nuclear Collisions and the Physics at $10^{12}$ K"

8. Hot Quarks, August 2008
   Estes Park, CO
   "Revealing the Details of QCD Energy Loss with Jets: Prospects of ATLAS Heavy-Ion Jet Measurements"

9. International Conference on High Energy Physics, July, 2008
   Philadelphia, PA
   Poster
   "Elucidating Jet Energy Loss in Heavy Ion Collisions"

10. American Chemical Society Spring Meeting, April 2008
    New Orleans, LA
    Invited Talk
    "ATLAS Heavy Ion Physics Program"

11. Quark Matter, February 2008
    Jaipur, India
    Plenary Presentation
    "Heavy Ion Physics Prospects from the ATLAS Detector at the LHC"

12. High $p_T$ Physics at the LHC, March 2007
    Jyvaskyla, Finland
    Invited Talk
    "RHIC Correlations and High-$p_T$ Measurements with ATLAS"

13. Winter Workshop on Nuclear Dynamics, February 2007
    Big Sky, MT
    "The Heavy Ion Physics Program with ATLAS at the LHC"

14. Quark Matter, November 2006
    Shanghai, China
    Poster
    "Evolution of the Away-Side Shapes From $\pi^0$-h Correlations in 200 GeV $Au + Au$ Collisions at RHIC-PHENIX"

15. Quark Matter, November 2006
    Shanghai, China
    Poster
    "Heavy Ion Jet Measurement Capabilities of the ATLAS Detector at the LHC"

16. ECT Workshop on Jet Physics in Heavy Ion Collisions at the LHC, September 2006
    Trento, Italy
    "Jet Physics in Heavy Ion Collisions with ATLAS"

17. Correlations and Fluctuations Workshop, July 2006
    Florence, Italy
    "Jet Correlations from PHENIX: From Low-$p_T$ to High-$p_T$"

18. Winter Workshop in Nuclear Dynamics, March 2006
    San Diego, CA
    "Jet Correlations from PHENIX"

19. Texas A&M University Nuclear Physics Seminar, October 2006
College Station, TX
"Jet Correlations at RHIC"

20. Columbia University Nuclear Physics Seminar, October 2006
New York, NY
"Jet Correlations at RHIC"

21. Los Alamos National Laboratory Nuclear Physics Seminar, August 2006
Los Alamos, NM
"Jet Correlations at RHIC: A Post-QM2005 Perspective"

22. Quark Matter, August 2005
Budapest, Hungary
"Probing Cold and Hot, Dense Nuclear Media via High-$p_T$ Jets with Di-hadron and $\gamma$-hadron Correlations at PHENIX"

23. APS April Meeting, 2005
Tampa, FL
"Jet Structure From Di-hadron Correlations in $d + Au$ Collisions"

24. RIKEN Workshop on Jet Correlations, March 2005
Brookhaven National Laboratory
"Jet Structure From Di-hadron Correlations in $d + Au$ Collisions"

25. DNP Fall Meeting, October 2004
Chicago, IL
"Modification of Jet Properties in the Nuclear Medium using $\pi^0$-h Azimuthal Correlations"

26. Quark Matter, January 2004
Oakland, CA
Poster
"Jet Properties from High-$p_T$ Azimuthal Correlation Functions in $d - Au$ Collisions at RHIC PHENIX"

27. DNP Fall Meeting, 2003
Tucson, AZ
"Jet Properties from High-$p_T$ Azimuthal Correlatons in $d - Au$ Collisions at $\sqrt{s_{NN}}$=200GeV"

28. APS Spring Meeting, April 2003
Philadelphia, PA
"$\pi^0 - h^{\pm}$ Azimuthal Correlations"

# PUBLICATIONS DETAILS

Selected publications with direct involvement

1. "Dihadron azimuthal correlations in Au+Au collisions at $\sqrt{s_{NN}}$=200 GeV"
   Phys. Rev. **C78** 014901 (2008)

2. "Transverse momentum and centrality dependence of dihadron correlations in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV: Jet quenching and the response of partonic matter"
   Phys. Rev. **C77** 011901 (2007)

3. "Jet Properties from dihadron correlations in p+p collisions at $\sqrt{s}$ = 200 GeV"
   Phys. Rev. **D74** 072002 (2006)

4. "Jet structure from dihadron correlations in d+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV"
   Phys. Rev. **C73** 054903 (2006)

5. "Jet structure of baryon excess in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV"
   Phys. Rev.**C71** 051902(R) (2005)

Conference Proceedings, etc.

1. "Elucidating Jet Energy Loss Using Jets: Prospects from ATLAS"
   Talk presented at Quark Matter, 2009, Knoxville, TN
   **arXiv:0907.4944 [nucl-ex]**

2. "Identification and Rejection of Fake Reconstructed Jets From a Fluctuating Heavy Ion Background in ATLAS"
   Talk presented at Hot Quarks, 2008, Estes Park, CO
   **arXiv:0810.1219 [nucl-ex]**

3. "Elucidating Jet Energy Loss in Heavy Ion Collosions"
   Poster presented at ICHEP, 2008, Philadelphia, PA
   **arXiv:0811:0746 [nucl-ex]**

4. "Heavy Ion Physics Prospects with the ATLAS Detector at the LHC"
   Plenary talk at Quark Matter, 2008, Jaipur, India
   **arXiv:0805.4656 [nucl-ex]**

5. "RHIC Correlations and High-$p_T$ Measurements with ATLAS"
   Invited talk at the "High $p_T$ Physics at the LHC" workshop, Jyvaskyla, Finland
   PoS(**LHC07**)019

6. "The Heavy Ion Physics Program with ATLAS at the LHC"
   Talk presented at the 23rd Winter Workshop on Nuclear Dynamics, Big Sky, MT
   **arXiv:0706.1983 [nucl-ex]**

7. "Evolution of the Away-Side Jet Shapes in $\pi^0$-h Correlations in 200 GeV $Au + Au$ Collisions with RHIC-PHENIX"
   Poster presented at Quark Matter, 2006, Shanghai, China
   **nucl-ex/0702049**

8. "Jet Correlations from PHENIX: Low-$p_T$ to High-$p_T$"
   Contribution to the International Workshop on Correlations and Fluctuations in Relativistic Nuclear Collisions, Florence, IT
   **nucl-ex/0612019**

9. "Jet Correlations from PHENIX"
   Talk presented at the 22nd annual Winter Workshop on Nuclear Dynamics
   Proc. 22nd Winter Workshop on Nuclear Dynamics, (2006) 141-148

10. "Probing Cold and Hot, Dense Nuclear Media Via High-p$_T$ Jets with Di-hadron and $\gamma$-hadron Correlations at PHENIX"
    Talk presented at Quark Matter 2005, Budapest Hungary
    **nucl-ex/0511046**

Additional PHENIX publications

1. "Suppression of away-side jet fragments with respect to the reaction plane in $Au + Au$ collisions at $\sqrt{s_{NN}} = 200$ GeV"
   **arXiv:1010.1521**

2. "Cold Nuclear Matter Effects on $J/\psi$ Yields as a Function of Rapidity and Nuclear Geometry in Deuteron-Gold Collisions at $\sqrt{s_{NN}} = 200$ GeV"
   **arXiv:1010.1246**

3. "Cross section and double helicity asymmetry for eta mesons and their comparison to neutral pion production in proton-proton collisions at $\sqrt{s} = 200$ GeV"
   **arXiv:1009.6624**

4. "Measurement of Transverse Single-Spin Asymmetries for $J/\psi$ Production in Polarized $p + p$ Collisions at $\sqrt{s} = 200$ GeV"
   **arXiv:1009.4864**

5. "Event Structure and Double Helicity Asymmetry in in Jet Production from Polarized $p+p$ Collisions at $\sqrt{s}$ = 200 GeV"
   **arXiv:1009.4921**

6. "Cross Section and Parity Violating Spin Asymmetries of $W^{\pm}$ Boson Production in Polarized $p+p$ Collisions at $\sqrt{s}$=500 GeV"
   **arXiv:1009.0505**

7. "Measurement of neutral mesons in $p+p$ collisions at $\sqrt{s}$ = 200 GeV and scaling properties of hadron production"
   **arXiv:1005.3674**

8. "Heavy Quark Production in $p+p$ and Energy Loss and Flow of Heavy Quarks in $Au+Au$ Collisions at $\sqrt{s_{NN}}$=200 GeV"
   **arXiv:1005.1627**

9. "Nuclear modification factors of phi mesons in d+Au, Cu+Cu and Au+Au collisions at $\sqrt{s_{NN}}$=200 GeV"
   **arXiv:1004.3532**

10. "Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV $Au+Au$ collisions"
    **arXiv:0706.3034**

11. "High $p_T$ Direct Photon and $\pi^0$ Triggered Azimuthal Jet Correlations in $\sqrt{s}$=200 GeV $p+p$ Collisions"
    Phys. Rev. **D82**, 072001 (2010)

12. "Azimuthal anisotropy of neutral pion production in $Au+Au$ collisions at $\sqrt{s_{NN}}$ = 200 GeV: Path-length dependence of jet quenching and the role of initial geometry"
    Phys. Rev. Lett. **105**, 142301 (2010)

13. "Elliptic and hexadecapole flow of charged hadrons in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV"
    Phys. Rev. Lett. **105**, 062301 (2010)

14. "Transverse momentum dependence of $J/\psi$ polarization at mid-rapidity in p+p collisions at $\sqrt{s}$=200 GeV"
    Phys. Rev. **D82**, 012001 (2010)

15. "Transition in yield and azimuthal shape modification in dihadron correlations in relativistic heavy ion collisions"
    Phys. Rev. Lett. **104**, 252301 (2010)

16. "Detailed measurement of the $e^+e^-$ pair continuum in p+p and Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV and implications for direct photon production"
Phys. Rev. **C81**, 034911 (2010)

17. "Enhanced production of direct photons in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **104**, 132301 (2010)

18. "Double helicity dependence of jet properties from dihadrons in longitudinally polarized p+p collisions at $\sqrt{s}$ =200 GeV"
Phys. Rev. **D81**, 012002 (2010)

19. "High-$p_T$ $\pi^0$ Production with Respect to the Reaction Plane in Au + Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. **C80**, 054907 (2009)

20. "Charged kaon interferometric probes of space-time evolution in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **103**, 142301 (2009)

21. "Photon-Hadron Jet Correlations in p+p and Au+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. **C80**, 024908 (2009)

22. "Systematic Studies of Elliptic Flow Measurements in Au+Au collisions at $\sqrt{s_{NN}}$ = 62.4 and 200 GeV"
Phys. Rev. **C80**, 024909 (2009)

23. "Measurement of bottom versus charm as a function of transverse momentum with electron-hadron correlations in p+p Collisions at $\sqrt{s}$=200 GeV"
Phys. Rev. Lett. **103**, 082002 (2009)

24. "Photoproduction of J/$\psi$ and of high mass $e^+e^-$ in ultra-peripheral Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Lett. **B679**, 321 (2009)

25. "Gluon-spin contribution to the proton spin from double-helicity asymmetry in inclusive $\pi^0$ production in polarized $p+p$ collisions at $\sqrt{s}$=200 GeV" Phys. Rev. Lett. **103**, 012003 (2009)

26. "Cold nuclear matter effects on $J/\psi$ production as constrained by $d+Au$ measurements at $\sqrt{s_{NN}}$=200 GeV (and Erratum)"
Phys. Rev. **C79** 059901 (2009)

27. "Inclusive cross section and double helicity asymmetry for $pi^0$ production in p+p collisions at $\sqrt{s}$=62.4GeV"
Phys. Rev. **D79** 012003 (2009)

28. "Dilepton mass spectra in $p + p$ collisions at $\sqrt{s}$= 200 GeV and the contribution from open charm"
Phys. Rev. **B670** 313 (2009)

29. "Suppression pattern of neutral pions at high transverse momentum in $Au + Au$ collisions at $\sqrt{s_{NN}}$ = 200 GeV and constraints on medium transport coefficients"
Phys. Rev. Lett. **101**, 232301 (2008)

30. "Onset of $\pi^0$ suppression studied in $Cu$+$Cu$ collisions at $\sqrt{s_{NN}} = 22.4$, 62.4, and 200 GeV"
Phys. Rev. Lett. **101**, 162301 (2008)

31. "Charged hadron multiplicity fluctuations in $Au + Au$ and $Cu + Cu$ collisions from $\sqrt{s_{NN}} = 22.5$ to 200 GeV"
Phys. Rev. **C78**, 044902 (2008)

32. "$J/\psi$ Production in $\sqrt{s_{NN}}$= 200 GeV $Cu + Cu$ Collisions"
Phys. Rev. Lett. **101**, 122301 (2008)

33. "Particle-species dependent modification of jet-induced correlations in $Au + Au$ collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **101**, 082301 (2008)

34. "Dihadron azimuthal correlations in $Au + Au$ collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. **C78**, 014901 (2008)

35. "Quantitative constraints on the transport properties of hot partonic matter from semi-inclusive single high transverse momentum pion suppression in $Au + Au$ collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. **C77**, 064907 (2008)

36. "Source breakup dynamics in $Au + Au$ Collisions at $\sqrt{s_{NN}}$ =200 GeV via three-dimensional two-pion source imaging"
Phys. Rev. Lett. **100**, 232301 (2008)

37. "Cold Nuclear Matter Effects on $J/\psi$ Production as Constrainted by $d + Au$ Measurements at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. **C77**, 024912 (2008)

38. "Centrality dependence of charged hadron production in $d + Au$ and $N + Au$ collisions at $\sqrt{s}$=200 GeV"
Phys. Rev. **C77**, 014905 (2008)

39. "Transverse momentum and centrality dependence of dihadron correlations in $Au + Au$ collisions at $\sqrt{s_{NN}}$=200 GeV: Jet-quenching and the response of partonic matter"
Phys. Rev. **C77**, 011901 (2008)

40. "Measurement of Single Muons at Forward Rapidity in $p+p$ Collisions at $\sqrt{s}$ = 200 GeV and Implications for Charm Production"
Phys. Rev. **D76**, 092002 (2007)

41. "A Detailed Study of High-$p_T$ Neutral Pion Suppression and Azimuthal Anisotropy in $Au + Au$ Collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. **C76**, 034904 (2007)

42. "Inclusive cross section and double helicity asymmetry for $\pi^0$ production in $p + p$ collisions at $\sqrt{s}$=200 GeV: Implications for the polarized gluon distribution in the proton"
Phys. Rev. **D76**, 051106 (2007)

43. "Measurement of density correlations in pseudorapidity via charged particle multiplicity fluctuations in $Au + Au$ collisions at $\sqrt{s_{NN}} = 200$ GeV"
Phys. Rev. **C76**, 034903 (2007)

44. "Elliptic Flow for $\phi$ Mesons and (Anti)deuterons in $Au + Au$ Collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **99**, 052301 (2007)

45. "System Size and Energy Dependence of Jet-Induced Hadron Pair Correlation Shapes in Relativistic Nuclear Collisions"
Phys. Rev. Lett. **98**, 232302 (2007)

46. "$J/\psi$ Production vs Centrality, Transverse Momentum, and Rapidity in $Au + Au$ Collisions at $\sqrt{s_{NN}}$ = 200-GeV"
Phys. Rev. Lett. **98**, 232301 (2007)

47. "$J/\psi$ production versus transverse momentum and rapidity in $p + p$ collisions at $\sqrt{s}$ = 200 GeV"
Phys. Rev. Lett. **98**, 232002 (2007)

48. "Correlated Production of p and $\bar{p}$ in $Au + Au$ Collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Lett. **B649**, 359-369 (2007)

49. "Production of $\omega$ Meson at Large Transverse Momenta in $p+p$ and $d+Au$ Collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. **C75**, 051902 (2007)

50. "Centrality Dependence of $\pi^0$ and $\eta$ Production at Large Transverse Momentum in $\sqrt{s_{NN}}$ = 200 GeV $d+Au$ Collisions"
Phys. Rev. Lett. **98**, 172302 (2007)

51. "Energy Loss and Flow of Heavy Quarks in $Au$+$Au$ Collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **98**, 172301 (2007)

52. "Scaling properties of azimuthal anisotropy in $Au+Au$ and $Cu+Cu$ collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **98**, 162301 (2007)

53. "Evidence for a long-range component in the pion emission source in $Au+Au$ Collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. Lett. **98**, 132301 (2007)

54. "High transverse momentum $\eta$ meson production in $p+p$, $d+Au$, and $Au+Au$ collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. **C75**, 024909 (2007)

55. "Measurement of Direct Photon Production in $p+p$ collisions at $\sqrt{s}$ = 200 GeV"
Phys. Rev. Lett. **98**, 012002 (2007)

56. "Measurement of high-$p_T$ Single Electrons from Heavy-Flavor Decays in $p+p$ Collisions at $\sqrt{s}$ = 200 GeV"
Phys. Rev. Lett. **97**, 252002 (2006)

57. "Jet Properties from Di-Hadron Correlations in $p+p$ Collisions at $\sqrt{s}$ = 200 GeV" Phys. Rev. **D74**, 072002 (2006)

58. "Nuclear Effects on Hadron Production in $d+Au$ and $p+p$ Collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. **C74**, 024904 (2006)

59. "Modifications to Di-Jet Hadron Pair Correlations in $Au$+$Au$ Collisions at $\sqrt{s_{NN}}$ = 200 GeV" Phys. Rev. Lett. **97**, 052301 (2006)

60. "Azimuthal Angle Correlations for Rapidity Separated Hadron Pairs in $d+Au$ Collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **96**, 222301 (2006)

61. "An Update on the Double Helicity Asymmetry in Inclusive Midrapidity $\pi^0$ Production for Polarized $p+p$ Collisions at $\sqrt{s} = 200$ GeV"
Phys. Rev. **D73**, 091102(R) (2006)

62. "Common suppression pattern of high $p_T$ $\eta$ and $\pi^0$ in $Au+Au$ at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **96**, 202301 (2006)

63. "Single Electrons from Heavy-Flavor Decays in $p+p$ Collisions at $\sqrt{s}$ = 200 GeV"
Phys. Rev. Lett. **96**, 032001 (2006)

64. "Jet Structure from dihadron correlations in $d+Au$ collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. **C73**, 054903 (2006)

65. "$\pi^0$/photon $v_2$ in $Au+Au$ collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. Lett. **96**, 032302 (2006)

66. "Nuclear Modification of Single Electron Spectra and Implications for Heavy Quark Energy Loss in $Au+Au$ Collisions at $\sqrt{s_{NN}} = 200$ GeV"
Phys. Rev. Lett. **96**, 032301 (2006)

67. "$J/\psi$ Production and Nuclear Effects for $d+Au$ and $p+p$ Collisions at $\sqrt{s_{NN}} = 200$ GeV"
Phys. Rev. Lett. **96**, 012304 (2006)

68. "Measurement of Transverse Single-Spin Asymmetries for Mid-rapidity Production of Neutral Pions and Charged Hadrons in Polarized $p+p$ Collisions at $\sqrt{s} = 200$ GeV"
Phys. Rev. Lett. **95**, 202001 (2005)

69. "Measurement of Single Electron Event Anisotropy in $Au+Au$ Collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. **C72**, 024901(2005)

70. "Production of $\phi$ mesons at mid-rapidity in $\sqrt{s_{NN}} = 200$ GeV $Au+Au$ collisions at RHIC"
Phys. Rev. **C72**, 014903 (2005)

71. "Saturation of azimuthal anisotropy in $Au+Au$ collisions at $\sqrt{s_{NN}}$ = 62 - 200 GeV"
Phys. Rev. Lett. **94**, 232302 (2005)

72. "Centrality Dependence of Direct Photon Production in $\sqrt{s_{NN}} = 200$ GeV $Au+Au$ Collisions"
Phys. Rev. Lett. **94**, 232301 (2005)

73. "Formation of dense partonic matter in relativistic nucleus-nucleus collisions at RHIC: Experimental evaluation by the PHENIX Collaboration"
Nucl. Phys. **A757**, Issues 1-2 , 184-283 (2005)

74. "Jet Structure of Baryon Excess in $Au+Au$ Collisions at $\sqrt{s_{NN}} = 200$ GeV"
Phys. Rev. **C71**, 051902(R) (2005)

75. "Mid-Rapidity Direct-Photon Production in $p+p$ Collisions at $\sqrt{s} =$ 200 GeV"
Phys. Rev. **D71**, 071102(R) (2005)

76. "Deuteron and anti-deuteron production in $Au+Au$ collisions at $\sqrt{s_{NN}}$ = 200 GeV"
Phys. Rev. Lett. **94**, 122302 (2005)

77. "Systematic Studies of the Centrality and $\sqrt{s_{NN}}$ Dependence of $dE_T/d\eta$ and $dN_{ch}/d\eta$ in Heavy Ion Collisions at Mid-rapidity"
Phys. Rev. **C71**, 034908 (2005)

78. "Nuclear Modification Factors for Hadrons At Forward and Backward Rapidities in $d+Au$ Collisions at $\sqrt{s_{NN}} = 200$ GeV"
Phys. Rev. Lett. **94**, 082302 (2005)

79. "Centrality Dependence of Charm Production from a Measurement of Single Electrons in $Au+Au$ Collisions at $\sqrt{s_{NN}}$=200 GeV"
Phys. Rev. Lett. **94**, 082301 (2005)

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