

Ron Belmont, Ph.D.

CONTACT INFORMATION	<p>Department of Physics & Astronomy University of North Carolina at Greensboro 321 Petty Building PO Box 26170 Greensboro, NC 27402-6170</p> <p>Voice: (336) 334-5844 Fax: (336) 334-5865 E-mail: rjbelmon@uncg.edu</p>
EDUCATION	<p>Vanderbilt University, Nashville, Tennessee</p> <p>Ph.D., Physics, December 2012</p> <ul style="list-style-type: none">• Advisor: Prof. Julia Velkovska• Dissertation Title: Measurements of identified hadrons in Au+Au and d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV <p>M.S., Physics, May 2009</p> <p>Seton Hall University, South Orange, New Jersey</p> <p>B.S., Physics, Magna Cum Laude, May 2005</p>
RESEARCH EXPERIENCE	<p>University of North Carolina at Greensboro</p> <ul style="list-style-type: none">• Research Scientist• August 2018—Present <p>University of Colorado Boulder</p> <ul style="list-style-type: none">• Research Associate• July 2015—July 2018• Principal Investigator: Prof. Jamie Nagle <p>Wayne State University</p> <ul style="list-style-type: none">• Research Associate• February 2013—July 2015• Principal Investigator: Prof. Sergei Voloshin <p>University of Michigan</p> <ul style="list-style-type: none">• Visiting Scholar• November 2012—July 2015• Principal Investigator: Prof. Christine Aidala <p>Vanderbilt University</p> <ul style="list-style-type: none">• Research Assistant• June 2006—December 2012• Principal Investigator: Prof. Julia Velkovska
MENTORSHIP EXPERIENCE	<p>University of North Carolina at Greensboro</p> <ul style="list-style-type: none">• Research advisor for undergraduate students<ul style="list-style-type: none">—Dylan Antonacci (current, post-bacc medical student)—Bryce Clary (past, third year)—Steven Duncan (past, recent graduate)—Jackson Leonard (past, recent graduate)

- Aidan Lytle (current, third year)
- Quentin Merritt (current, third year)
- Eva Moniz (past, computer science student)
- Viola Munos (past, third year)
- Academic advisor for undergraduate students
 - Quentin Merritt (current, third year)
 - Dennis Njiru (current, third year)
- Informal mentor for undergraduate students
 - Kamara Culbreath (current, third year)
 - Sarita Sepulveda (current, third year)
 - Kat Swinson (current, third year)

University of Colorado Boulder

- Significant role in advising two graduate students (Dr. Theodore Koblesky and Dr. Javier Orjuela Koop) and three undergraduate students (Sebastian Vazquez Carson, Pengqi Yin, Karoline Dapprich)

Wayne State University

- Significant role in advising four graduate students (Dr. Jocelyn Mlynarz, Dr. Vera Loggins, Dr. Mohammad Saleh, Dr. Jinjin Pan)

TEACHING EXPERIENCE

University of North Carolina at Greensboro

- Instructor for Thermal Physics
 - Spring 2021
- Instructor for General Physics I with Calculus Lab
 - Spring 2021
- Co-developer of and Co-instructor for Experimental Methods in Physics I
 - Fall 2020
- Instructor for General Physics II with Calculus
 - Fall 2019, Fall 2020
- Instructor for General Physics I Lab
 - Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020
- Instructor for General Physics II Lab
 - Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020
- Instructor for Modern Physics Lab
 - Spring 2019
- Instructor for Electricity and Magnetism Lab
 - Fall 2018

Wayne State University

- Guest Lecturer for General Physics I

University of Michigan

- Guest Lecturer for Methods of Theoretical Physics I

Vanderbilt University

- Teaching Assistant for General Physics II Laboratory

PROFESSIONAL SERVICE

General

- RHIC & AGS Users Executive Committee chair-elect (2019-2020, chair 2020-2021, past-chair 2021-2022)
- RHIC & AGS Users Executive Committee member (2018-2019)
- Lead organizer of the small systems workshop at the RHIC & AGS Users Meeting 2017
- Referee for Physical Review Letters, Physical Review C, and European Physical Journal A
- Nuclear physics DC day attendee

sPHENIX Collaboration (note that T-1044 is the Fermilab designation for the sPHENIX calorimetry beam tests)

- Bylaws Committee chair
- Diversity, Equity, Inclusion Committee member
- T-1044 2017 and 2018 combined results Paper Committee co-chair
- T-1044 2018a controlled access leader, tile mapper expert, DAQ operator, shift leader (Fermilab Test Beam Facility, February-March 2018)
- T-1044 2017a controlled access leader, tile mapper expert, DAQ operator, shift leader (Fermilab Test Beam Facility, February-March 2017)
- T-1044 2016a Paper Committee co-chair
(See journal publication 11 below)
- T-1044 2016a controlled access leader, tile mapper expert, DAQ operator, shift leader (Fermilab Test Beam Facility, April-May 2016)

PHENIX Collaboration

- Executive Council member, January 2019 - Present
- Heavy ion physics working group convener, August 2018 - Present
- Co-chair, Juniors Committee, December 2015 - August 2018
- Member, Paper Preparation Group (PPG237)
In progress
- Member, Paper Preparation Group (PPG236)
In progress
- Member, Paper Preparation Group (PPG221)
See journal publication 6 below
- Member, Paper Preparation Group (PPG219)
See journal publication 3 below
- Chair, Paper Preparation Group (PPG218)
See journal publication 5 below
- Member, Paper Preparation Group (PPG216)
See journal publication 4 below
- Chair, Internal Review Committee (IRC207)
See journal publication 7 below

- Chair, Paper Preparation Group (PPG206)
See journal publication [8](#) below
- Member, Paper Preparation Group (PPG205)
See journal publication [9](#) below
- Member, Internal Review Committee (IRC183)
See journal publication [13](#) below
- Member, Internal Review Committee (IRC148)
See journal publication [17](#) below
- Member, Internal Review Committee (IRC147)
See journal publication [14](#) below
- Chair, Paper Preparation Group (PPG146)
See journal publication [18](#) below
- Member, Paper Preparation Group (PPG123)
See journal publication [19](#) below
- Data recalibration, TOFW timing offsets and track matching residuals, Run8dAu and Run8pp data sets
- Assistant Production Manager, Run7 and Run8 central arm production
- Regular Shifts, Run7, Run8, Run10, Run11, Run12, Run16

Wayne State University

- Meeting organizer and chair, 5th Michigan Heavy Ion Physics Meeting, Wayne State University, November 2014
- Co-organizer and co-chair, Relativistic Heavy Ion Journal Club, January 2014–July 2015

Vanderbilt University

- Student Representative to the Graduate Program Committee, Physics and Astronomy Department, Vanderbilt University, 2006–2009
- Student Representative, Climate Committee, Physics and Astronomy Department, Vanderbilt University, 2006–2010

RESEARCH PRESENTATIONS

Invited Talks

- **R. Belmont.** “Small systems at RHIC: a brief overview”
Spring Meeting of the APS Topical Group on Hadronic Physics, online only, April 2021
- **R. Belmont.** “Challenges to hydrodynamics from correlations”
Lead talk at mini-symposium, APS April Meeting, online only, April 2021
- **R. Belmont.** “Searching for the smallest droplets of the early universe: heavy-ion physics with small systems”
Nuclear physics seminar, University of Illinois at Urbana-Champaign, February 2021
- **R. Belmont.** “Collectivity in small systems”
Initial Stages, online only, January 2021

- **R. Belmont.** “Small systems in heavy ion collisions”
JETSCAPE workshop, online only, March 2020
- **R. Belmont** on behalf of the PHENIX Collaboration. “Droplets of quark gluon plasma: PHENIX results on small systems at RHIC”
Winter Workshop on Nuclear Dynamics, Puerto Vallarta, Mexico, March 2020
- **R. Belmont.** “Towards a quantitative understanding of the QGP”
Fall Meeting of the APS Division of Nuclear Physics, Crystal City, VA, October 2019
- **R. Belmont.** “Droplets of quark gluon plasma: small systems at RHIC”
International Symposium on Multiparticle Dynamics, Santa Fe, NM, September 2019
- **R. Belmont** on behalf of the PHENIX Collaboration. “PHENIX Highlights”
RHIC & AGS Users Meeting, Brookhaven National Lab, June 2019
- **R. Belmont.** “Small systems: some recent results”
Physics department seminar, Lehigh University, February 2019
- **R. Belmont.** “Small systems in heavy-ion collisions: creating droplets of the early universe?”
Physics department colloquium, Lehigh University, February 2019
- **R. Belmont** on behalf of the PHENIX Collaboration. “Overview of heavy ion physics at PHENIX”
Cracow Epiphany Conference, Krakow, Poland, January 2019
- **R. Belmont.** “Small systems in heavy-ion collisions: creating droplets of the early universe?”
Physics department colloquium, North Carolina State University, November 2018
- **R. Belmont.** “Small systems at RHIC: experimental perspective”
Plenary Session, Second international workshop on collectivity in small collision systems, Wuhan, Hubei, China, June 2018
- **R. Belmont.** “Flow in small systems: a few recent results”
Nuclear physics seminar, Utrecht Universitet, May 2018
- **R. Belmont** on behalf of the PHENIX Collaboration. “Perspectives from the PHENIX experiment: highlights”
Experimental overview talk, Quark Matter 2018, Lido, Veneto, Italy, May 2018
- **R. Belmont.** “The initial state and early time dynamics in heavy-ion collisions”
Lead talk at mini-symposium, APS April Meeting, Columbus, Ohio, April 2018
- **R. Belmont.** “Searching for collectivity and testing the limits of hydrodynamics: small systems at RHIC”
Physics department seminar, Stony Brook University, January 2018
- **R. Belmont.** “A tale of three QGPs: the large, the small, and the exotic”
Physics department colloquium, Colorado School of Mines, November 2017
- **R. Belmont.** “Searching for collectivity and testing the limits of hydrodynamics: understanding small systems in heavy ion collisions”
Heavy Ion Physics Seminar, Los Alamos National Lab, November 2017
- **R. Belmont.** “Longitudinal dynamics and collective behavior in the d+Au beam energy scan”
Plenary Session, Initial Stages 2017, Krakow, Lesser Poland, Poland, September 2017

- **R. Belmont.** “Experimental searches for local parity violation in heavy ion collisions”
Nuclear Physics Seminar, University of Houston, June 2017
- **R. Belmont.** “Searching for collectivity and testing the limits of hydrodynamics: results from the 2016 d+Au beam energy scan”
Heavy Ion Physics Seminar, Brookhaven National Lab, May 2017
- **R. Belmont.** “Experimental searches for P-violating processes in heavy ion collisions”
1st CORE-U International Conference, Higashihiroshima, Hiroshima Prefecture, Japan, March 2016
- **R. Belmont.** “Overview of experimental searches for local parity violating effects”
ALICE Juniors Day, CERN, March 2015
- **R. Belmont** on behalf of the ALICE collaboration. “A brief review of recent results from the ALICE collaboration”
Lake Louise Winter Institute, Lake Louise, Alberta, Canada, February 2015
- **R. Belmont.** “Experimental searches for local parity violation in heavy ion collisions”
ALICE Correlations and Fluctuations Workshop, CERN, February 2015
- **R. Belmont** on behalf of the PHENIX Collaboration. “Identified charged hadron spectra and ratios in PHENIX”
Strangeness in Quark Matter, Birmingham, England, August 2015
- **R. Belmont.** “A continuation of the RAA discussion: what we can learn from identified hadrons”
Wayne State University Nuclear-Astro-Particle Seminar, February 2014
- **R. Belmont.** “The other side of RHIC: a little bit about heavy ion physics, with an emphasis on identified hadrons”
University of Michigan HEP-Astro-Nuclear Seminar, April 2013

Contributed Talks

- **R. Belmont** on behalf of the PHENIX Collaboration. “PHENIX results on small systems collectivity at RHIC”
Small Systems Workshop, RHIC & AGS Users Meeting, Brookhaven National Lab, October 2020
- **R. Belmont** on behalf of the PHENIX Collaboration. “PHENIX results on the Run-16 d+Au beam energy scan”
Small Systems Workshop, RHIC & AGS Users Meeting, Brookhaven National Lab, June 2017
- **R. Belmont** on behalf of the PHENIX Collaboration. “PHENIX results on multi-particle correlations in small systems”
Quark Matter, Chicago, Illinois, February 2017
- **R. Belmont** on behalf of the ALICE Collaboration. “Charge dependent flow measurements and the search for the Chiral Magnetic Wave in ALICE”
Workshop on Chirality, Vorticity, and Magnetic Fields in QCD, Los Angeles, CA, January 2015
- **R. Belmont** on behalf of the ALICE Collaboration. “Charge dependent flow measurements and the search for the Chiral Magnetic Wave in ALICE”
Quark Matter, Darmstadt, Hesse, Germany, May 2014

- **R. Belmont** on behalf of the PHENIX Collaboration. “Identified charged hadron spectra and ratios in Au+Au and d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
APS April Meeting, Denver, CO, April 2013
- **R. Belmont** on behalf of the PHENIX Collaboration. “Energy Loss and Flavor Dynamics from Single Particle Measurements in PHENIX”
Quark Matter, Knoxville, TN, March 2009
- **R. Belmont** on behalf of the PHENIX Collaboration. “Various Aspects of Deuteron and Antideuteron Spectra in Au+Au Collisions”
Hot Quarks, Estes Park, CO, August 2008
- **R. Belmont** on behalf of the PHENIX Collaboration. “PHENIX TOF.W Run-7 Performance Results”
Southeast Section regional meeting of the APS, Nashville, TN, November 2007
- **R. Belmont** on behalf of the PHENIX Collaboration. “PHENIX TOF.W Run-7 Performance Results”
Fall meeting of the APS Division of Nuclear Physics, Nashville, TN, October 2007

Posters

- **R. Belmont** on behalf of the PHENIX Collaboration. “Identified charged hadron spectra and ratios in Au+Au and d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Quark Matter 2014, Darmstadt, Hesse, Germany, May 2014
- **R. Belmont** on behalf of the PHENIX Collaboration. “Deuteron and Antideuteron Spectra, Yields, and Ratios in Au+Au Collisions at 200 GeV”
Quark Matter 2008, Jaipur, Rajasthan, India, February 2008
- C. Crimi, S. O’Malley, C. Antonacci, D. Cohen, S. Gavitt, **R. Belmont**, A. O. Sezer, D. M. Bubb. “Depositing Conducting Polyaniline Films Using an Infrared Laser”
Gordon Research Conference for Laser Interactions with Materials 2004

MEDIA ATTENTION

UNCG Research Magazine, Fall 2019: ([clickable link](#))

Physics World, September 22, 2017: ([clickable link](#))

Phys.org, September 18, 2017: ([clickable link](#))

SELECTED PUBLICATIONS

Journal Publications

1. C. A. Aidala et al. “Design and Beam Test Results for the 2D Projective sPHENIX Electromagnetic Calorimeter Prototype”
Submitted to IEEE Trans. Nucl. Sci., arXiv:2003.13685
2. S.H. Lim, Q. Hu, **R. Belmont**, K.K. Hill, J.L. Nagle, D.V. Perepelitsa “Examination of Flow and Non-Flow Factorization Methods in Small Collision Systems”
Phys. Rev. C 100, 024908 (2019)
3. C. Aidala et al. (PHENIX Collaboration) “Nonperturbative transverse momentum broadening in dihadron angular correlations in $\sqrt{s_{NN}} = 200$ GeV proton-nucleus collisions”
Phys. Rev. C 99, 044912 (2019)

4. C. Aidala et al. (PHENIX Collaboration) “Creating small circular, elliptic, and triangular droplets of quark-gluon plasma”
Nature Physics, 15, 214–220 (2019)
5. C. Aidala et al. (PHENIX Collaboration) “Multiparticle azimuthal correlations for extracting event-by-event elliptic and triangular flow in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Phys. Rev. C 99, 024903 (2019)
6. C. Aidala et al. (PHENIX Collaboration) “Pseudorapidity dependence of particle production and elliptic flow in asymmetric nuclear collisions of p +Al, p +Au, d +Au, and ^3He +Au at $\sqrt{s_{NN}} = 200$ GeV” Phys. Rev. Lett. 121, 222301 (2018)
7. C. Aidala et al. (PHENIX Collaboration) “Measurements of mass-dependent azimuthal anisotropy in central p +Au, d +Au, and ^3He +Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Phys. Rev. C 97, 064904 (2018)
8. C. Aidala et al. (PHENIX Collaboration) “Measurements of multiparticle correlations in d +Au collisions at 200, 62.4, 39, and 19.6 GeV and p +Au collisions at 200 GeV and implications for collective behavior”
Phys. Rev. Lett. 120, 062302 (2018)
9. C. Aidala et al. (PHENIX Collaboration) “Measurements of azimuthal anisotropy and charged-particle multiplicity in d +Au collisions at 200, 62.4, 39, and 19.6 GeV”
Phys. Rev. C 96 064905, (2017)
10. J.L. Nagle, **R. Belmont**, J. Orjuela Koop, D.V. Perepelitsa, P. Yin, Z.-W. Lin, D. McGlinchey. “Are minimal conditions for collectivity met in $e+e^-$ collisions?”
Phys. Rev. C 97, 024909 (2018)
11. C. Aidala et al. “Beam test results for the sPHENIX electromagnetic and hadronic calorimeter prototypes”
IEEE Trans. Nucl. Sci. 65, 2901 (2018)
12. **R. Belmont** and J.L. Nagle. “To CME or not to CME? Implications of p +Pb measurements on the chiral magnetic effect in heavy ion collisions”
Phys. Rev. C 96, 024901 (2017)
13. A. Adare et al. (PHENIX Collaboration) “Measurements of directed, elliptic, and triangular flow in Cu+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Phys. Rev. C 94, 054910 (2016)
14. A. Adare et al. (PHENIX Collaboration) “Measurements of the higher order anisotropic flow coefficients for identified hadrons in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Phys. Rev. C 93, 051902(R) (2016)
15. J.D. Orjuela Koop, **R. Belmont**, P. Yin, and J.L. Nagle. “Exploring the beam-energy dependence of flow-like signatures in small system d +Au collisions”
Phys. Rev. C 93, 044910 (2016)
16. J. Adam et. al. (ALICE Collaboration) “Charge dependent flow and the search for the chiral magnetic wave in Pb+Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV”
Phys. Rev. C 93, 044903 (2016)

17. A. Adare et al. (PHENIX Collaboration) “Measurement of K_S^0 and K^{*0} in p+p, d+Au, and Cu+Cu collisions at $\sqrt{s_{NN}} = 200$ GeV”
Phys. Rev. C 90, 054905 (2014)
18. A. Adare et al. (PHENIX Collaboration) “Identified charged hadron spectra and ratios in Au+Au and d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Phys. Rev. C 88, 024906 (2013)
19. A. Adare et al. (PHENIX Collaboration) “Deviation from quark-number scaling of the anisotropy parameter v_2 of pions, kaons, and protons in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Phys. Rev. C 85, 064914 (2012)
20. R. F. Haglund Jr., **R. Belmont**, D. M. Bubb, N. L. Dygert, S. L. Johnson Jr., K. E. Schriver. “Mechanism of Resonant Infrared Laser Vaporization of Intact Polymers”
Proc. SPIE 6261, 62610V (2006)
21. D. M. Bubb, S. L. Johnson, **R. Belmont**, K. E. Schriver, R. F. Haglund Jr., C. Antonacci, L. S. Yeung. “Mode-specific Effect in Resonant Infrared Ablation and Deposition of Polystyrene”
Appl. Phys. A 83, 147-151 (2006)
22. D. M. Bubb, S. M. O’Malley, C. Antonacci, **R. Belmont**, R. A. McGill, C. Crimi. “Observation of Persistent Photoconductivity in Conducting Polyaniline Thin Films”
Appl. Phys. A 81, 119-125 (2004)

Conference Proceedings

1. **R. Belmont** on behalf of the PHENIX Collaboration. “Droplets of quark gluon plasma: PHENIX results on small systems at RHIC”
J. Phys. Conf. Ser. 1602, 012001 (2020)
2. **R. Belmont** on behalf of the PHENIX Collaboration. “Overview of recent results from the PHENIX Collaboration”
Acta Phys. Polon. B 50, 1003-1012 (2019)
3. **R. Belmont** on behalf of the PHENIX Collaboration. “Overview of results from the PHENIX Collaboration”
Nucl. Phys. A 982, 22-28 (2019)
4. **R. Belmont** on behalf of the PHENIX Collaboration. “PHENIX results on multiparticle correlations in small systems”
Nucl. Phys. A 967, 341-344 (2017)
5. **R. Belmont** on behalf of the PHENIX Collaboration. “Identified charged hadron spectra and ratios in Au+Au and d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
J. Phys. Conf. Ser. 509, 012005 (2014)
6. **R. Belmont** on behalf of the ALICE Collaboration. “Charge dependent flow measurements and the search for the Chiral Magnetic Wave in ALICE”
Nucl. Phys. A 931, 981-985 (2014)
7. S. A. Voloshin and **R. Belmont**. “Measuring and interpreting charge dependent anisotropic flow”
Nucl. Phys. A 931, 992-996 (2014)

8. **R. Belmont** on behalf of the PHENIX Collaboration. “Energy Loss and Flavor Dynamics from Single Particle Measurements in PHENIX”
Nucl. Phys. A 830, 697c-700c (2009)
9. **R. Belmont** on behalf of the PHENIX Collaboration. “Deuteron and Antideuteron Measurements in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV”
Eur. Phys. J. C 62, 243-248 (2009)