

Jacquelyn Noronha-Hostler

Curriculum Vitae



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Personal github: github.com/jnoronhaostler

Group github: github.com/nucthUIUC

University of Illinois Urbana-Champaign
Department of Physics
Loomis Laboratory
1110 W Green St
Urbana, IL 61801

Research Experience

University of Illinois Urbana Champaign, Urbana, IL

Assistant Professor (Physics Department)

2019-present

Rutgers University, Piscataway, NJ USA

Assistant Professor (Physics and Astronomy Department)

2017-2019

University of Houston, Houston, TX USA

Postdoctoral Fellow (Physics Department)

2015-2017

- Principal Investigator: Claudia Ratti

Columbia University, New York, NY USA

Associate Research Scientist (Physics Department)

2014-2015

- Principal Investigator: Miklos Gyulassy

University of Sao Paulo, Sao Paulo, SP Brazil

Postdoctoral Fellowship (Mathematical Physics Department)

2011-2014

- Principal Investigator: Frederique Grassi

Argonne National Laboratory, Argonne, IL USA

Internship (High Energy Physics Division) with Robert Cadman

2004

Education

Ph.D, Theoretical Physics- Institute of Theoretical Physics

Goethe-Universität- Advisor: Carsten Greiner 2010

Guest Student at Columbia University 2008-2009

B.A., Double Major Physics and Mathematics, Minor German

Berea College 2004

Research Interests

- Relativistic Viscous Hydrodynamics (Smoothed Particle Hydrodynamics)
 - Equation of State from Lattice Quantum Chromodynamics and phenomenological models for applications in heavy-ion collisions and neutron stars
 - Jet Energy loss in Relativistic Heavy-Ion Collisions
 - Open-source software development
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Awards and Prizes

- Department of Energy Early Career Award 2018-2023
 - Alfred P. Sloan Fellowship 2018-2020
 - Flash Talk Recipient for Best Poster at Quark Matter 2015
 - Waldemar Noll Scholarship in Physics, Berea College, 2004
 - Senior Mathematics Award, Berea College, 2004
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Research Performance

- **Research Funding-** Over \$1.3 million in research and travel grants funded by: Department of Energy (DOE), Alfred P. Sloan Fellowship, National Science Foundation (NSF), Sao Paulo Research Foundation (FAPESP), German Academic Exchange Service (DAAD), see details below.
 - **Publications- 95 Peer Reviewed Publications** that includes *1 famous paper* (>250 citations), *4 very well-known papers* (100-249 citations), *17 well-known papers* (50-99 citations), 1 Invited Review, 1 Editor's Choice, and 1 Rapid Communication.
Total citations: > 3300, **h-index:** 34 (see details below)
(Source: inspirehep.net/author/profile/J.Noronha.Hostler.1)
 - **Talks-** *129 talks* at conferences and universities (*104 invited talks*) that includes 14 plenary talks, 4 summary talks, 15 colloquia, 2 series of lectures, and 1 flash talk (see details below).
 - **Service and Committees-** APS Division of Nuclear Physics Executive Committee 2020-2022, Faculty Leader at Illinois for the 2021, 2022 Conference for Undergraduate Women in Physics, DOE S&T Review Panel for RHIC, Elected Member of the RHIC & AGS User's Committee at Brookhaven National Laboratory, 11 current Students/Postdocs advised in my group and 8 former members (see details below).
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Funding

- National Science Foundation Cyberinfrastructure for Sustained Scientific Innovation (CSSI), “Frameworks: MUSES, Modular Unified Solver of the Equation of State”, \$4.4 million (total), 16+ institutions, \sim \$500,000 (co-PI Noronha-Hostler). Cyberinfrastructure Convener. <https://muses.physics.illinois.edu/>
- National Science Foundation Workshop Funding 2021, “Workshop: From Heavy-Ion Collisions to Neutron Stars”, \$5,000 with C. Ratti (PI), V. Dexheimer, J. Noronha-Hostler, J. Noronha, N. Yunes
- Department of Energy Early Career Award 2018-2023, “Dynamical Aspects of the Quantum Chromodynamic Phase Transition”, \$750,000 over 5 years
- Alfred P. Sloan Fellowship 2018-2020, “Unveiling the properties of nature’s first liquid”, \$65,000 over 2 years
- FAPESP Visiting Scientist Grant, Summer 2016
- FAPESP Grant, Postdoctoral Fellow, 2011-2014
- Helmholtz School for Quark Matter Studies in Heavy Ion Collisions 2008-2010
- Frankfurt International Graduate School for Science, 2005-2008
- Deutscher Akademischer Austauschdienst Study Abroad, 2002
- Benjamin A. Gilman International Scholarship, 2003
- NSF Travel Grant, Kemer, Turkey 2003

Teaching Experience

Classes

- Neutron Stars (new course) - Fall 2022
- Subatomic Physics 470 - University of Illinois Spring 2021
- Subatomic Physics 570 - University of Illinois Fall 2020, Fall 2021
- Physics 211 - University of Illinois Fall 2019, Spring 2020
- Analytical Physics IA for Engineers - Rutgers University Fall 2018
- Honors Analytical Physics IB for Engineers - Rutgers University Spring 2018, 2019

Guest Lecturer

- Extended Analytical Physics - Rutgers University 2018
- Modern Physics - Rutgers University 2017, 2018
- General Physics I - University of Houston 2016
- Nuclear Physics- Columbia University 2014

4.5 hours of Lectures on Hot QCD- National Nuclear Physics Summer School (NNPSS), MIT Summer 2022

- Lattice QCD, QCD at finite T and large densities, Transport Coefficients of QCD, Out-of-equilibrium QCD

Mini-Course on Heavy-ion Collisions- University of Sao Paulo Summer 2016

- The History of Lattice QCD within Heavy Ion Collisions, Current Hot Topics in Lattice QCD, Overview of Viscosity Calculations in Heavy-Ion collisions, Extracting Viscosity from Experimental Data

Teaching Workshop Participant- ARN Postdoc Workshop 2016

Teaching Assistant- Goethe-Universität, 2004 - 2008

- Held two hour per week tutorial groups (both in German and English) in Classical Mechanics 1 & 2, Electrodynamics, Quantum Mechanics, and Thermodynamics

Teaching Assistant- Berea College 2001 - 2004

- Introduction to Astronomy, General/Intermediate Physics, Quantum Mechanics, Mathematical Methods in Physics, Calculus, and Differential Equations.

Advising

Current group members

- Dekrayat Almaalol (Postdoctoral Fellow starting Sept 2021)
- Patrick Carzon (PhD student, defense est 2023)
- Débora Mroczek (PhD student)
- Nikolas Camacho Cruz (PhD student)
- Jordi Salinas san Martín (PhD student)
- Nanxi Yao (PhD student)
- Isaac Long (REU student 2021, now PhD student 2022+)
- Emily Dillingham (REU student 2021,2022)
- Alex Espino (REU student 2022)

Co-advised

- Hung Tan (PhD Student of Nicolas Yunes), EST PhD 2023

Former Group members

- Travis Dore (PhD student, defend Aug 15, 2022) - now postdoc at Bielefeld University
 - Christopher Plumberg (Postdoctoral Fellow starting Sept 2020-2022) - now Assistant Professor at Pepperdine University
 - Steven Li (UIUC undergraduate, 2020-2022) - now New York University PhD student
 - Annie Gao (UIUC undergraduate, 2020-2021) - now Johns Hopkins PhD student
 - Lydia Spsychalla (UIUC undergraduate student 2020) - now Penn State PhD student
 - Skanda Rao (Rutgers undergraduate student, 2017-2019) - now MIT PhD student
 - Noah Paladino (Rutgers undergraduate student, 2017-2018) - now MIT PhD student
 - Emma McLaughlin (REU student, 2018) - now Columbia University PhD student
 - Matthew Sievert (Postdoctoral Fellow 2018-2020) - now Assistant Profess at New Mexico State University
 - 2 high school students through the Young Scholars program (Summer 2021)
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Thesis Committees

- April Townsend (University of Illinois Urbana Champaign) PhD 2022

- Debora Mroczek (University of Houston) Honors Thesis 2020
 - Annika Ewigleben (Lehigh University) PhD 2021
 - Pouya Asadi (Rutgers University) PhD 2019
 - Felix Clark (Columbia University) PhD 2019
 - Laura Hauvener (Columbia University) PhD 2018
 - Jacob Rose (University of Houston) Honors Thesis 2017
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**Professional
Service**

1. American Physics Society's Topical Group on Hadronic Physics Dissertation Committee 2022-2024
2. International Advisory Committee for Quark Matter 2023
3. International Advisory Committee for Initial Stages 2023
4. Cyberinfrastructure convener of the MUSES collaborations 2021-2026
5. Co-organizer for "Intersection of nuclear structure and high-energy nuclear collisions", Institute of Nuclear Theory, University of Washington, Seattle, January 23 - February 24, 2023
6. International Advisory Committee for Quark Matter 2022
7. Co-organizer for "The Many Faces of Relativistic Fluid Dynamics", Kavli Institute for Theoretical Physics, May 2023
8. Panelist on a DOE science review for a proposal for equipment to upgrade one of the heavy-ion experiments at the LHC, April 2021
9. Coordinator for Snowmass 2021 Letter of Intent for EF07 on High Density QCD in Small Collision Systems
10. International Advisory Committee for Initial Stages 2021
11. Co-organizer for "Workshop: From Heavy-Ion Collisions to Neutron Stars" August 2020 and May 2021
12. Co-organizer for the virtual "Nuclear Physics Journal Club" that connects topics from heavy-ion collisions, nuclear astrophysics, and gravitational waves starting May 2020
13. Elected to the American Physical Society (APS) Division of Nuclear Physics Executive Committee 2020-2022
14. Reviewer for the Department of Energy 2019 Science and Technology (S&T) Review of the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory (BNL)
15. Local Organizing Committee of Hard Probes 2020
16. RHIC/AGS User's Award Selection Committee 2019
17. Co-Organizer of the 70th Birthday Symposium for Miklos Gyulassy

18. Local Organizing Committee of Initial Stages 2019
 19. Elsevier Young Scientist Award Committee 2018
 20. Correlations Working Group at the RBRC Workshop on the Definition of Jets in a Large Background 2018
 21. RHIC/AGS User's Award Selection Committee 2018
 22. Convener for Conference on the Intersections of Particle and Nuclear Physics (CIPANP) 2018 at Palm Springs, CA
 23. Fusion Project Runway panel (science with art)- Pratt Institute Dec 4, 2017
 24. Elected member to the RHIC and AGS User's Executive Committee 2017-2020
 25. Jet Workshop Organizer and Poster Judge for the 2017 RHIC & AGS Annual User's Meeting
 26. Graduate School Panelist, Physics Club, Rice University, April 2017
 27. Elected Postdoc/student representative to the RHIC and AGS User's Executive Committee 2016-2017
 28. Member of Beam Energy Scan Theory (BEST) Collaboration in the Hydrodynamics and Equation of State Working Groups
 29. Seminar Organizer for Columbia University Nuclear Theory Seminar Spring 2015-Fall 2015
 30. Organizer for Columbia University Mini-Conference on Heavy Ions August 24-28 2015
 31. Referee for Physical Review Letters, Physics Letters B, Physical Review C, Physical Review D, Nuclear Physics A, Journal of Physics: Conference Series, and European Physical Journal A
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Diversity and Inclusion

1. American Physics Society Topical Group on Hadronic Physics Dissertation Award Committee 2022+
2. UIUC General Education Committee (Campus Wide) 2022+
3. UIUC Diversity Committee (Physics Department)
4. 2021 Division of Nuclear Physics Womxn in Science Social speaker and panelist
5. 2021 Women and Gender Minorities in Physics and Astronomy group (WGMPA) retreat panel
6. Lead Faculty member for Conference for Undergraduate Women in Physics (CuWiP) 2021 at the University of Illinois Urbana Champaign
7. Mentored 2 high school students through the Young Scholars program (Summer 2021)

8. Diversity + Career Development Organizer for the 2018 RHIC & AGS Annual User's Meeting
 9. Conferences for Undergraduate Women in Physics (CUWiP)- Navigating Professional Spaces Panel Chair and Work-Life Balance Topic Table, Jan 2018
 10. Conferences for Undergraduate Women in Physics (CUWiP)- Graduate School Panelist and Poster Judge Jan. 2017
 11. Panelist and Judge for the Conference for Undergraduate Women in Physics at Rice University Jan. 2017
 12. Outreach done through Girl's Science Day 2015 at Columbia University and Girls interested in STEM talk at West End Elementary School
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Software Development

- **ICcing** (2020)
Resulted in 1 publication 1 manuscripts in submission
Code to initialize conserved charges in relativistic heavy-ion collisions
<https://github.com/pcarzon/ICcing>
- **Equation of State: Lattice QCD coupled to 3D Ising model** (2020)
Resulted in 4 peer-reviewed publications, 1 manuscript in submission
Equation of state for $\{T, \mu_B\}$ with a parameterized 3D Ising model that can describe the QCD critical point that is coupled to the Lattice QCD reconstructed equation of state
<https://bitbucket.org/bestcollaboration/>
- **Equation of State: BSQ Lattice QCD** (2019)
Resulted in 1 peer-reviewed publications
Equation of state for $\{T, \mu_B, \mu_S, \mu_Q\}$ reconstructed from Lattice QCD results up to $\mathcal{O}(\mu_B)$
https://github.com/cratti/EoS_BQS
- **SHEE (Soft-Hard Event Engineering) & DAB-MOD** (2016)
Resulted in 15 peer-reviewed publications
First code to combine event-by-event relativistic viscous hydrodynamics with an energy loss model and solved the long standing v_2 to R_{AA} puzzle. DAB-MOD (D and B mesons module) allows for a Langevin and energy loss scenario to describe the evolution of heavy flavor throughout the Quark Gluon Plasma on-top of full 2+1 event-by-event hydrodynamical backgrounds
- **v-USPhydro** (2013)
Resulted in 42 peer-reviewed publications+3 in submission
Event-by-event relativistic hydrodynamical model with bulk and shear viscosity using Smoothed Particle Hydrodynamics
<https://github.com/astrophysicist87/EBE-vUSPhydro>
- **rate equations+Hagedorn States** (2008)
Resulted in 7 peer-reviewed publications.
Solves multiple coupled non-linear partial differential equations.

Computer Skills

- Programs/Languages/Operating Systems: C, C++, Fortran, L^AT_EX, Mathematica, Linux
 - Coding experience in Smoothed Particle Hydrodynamics, link lists, bash scripts, Monte Carlo sampling, large code development, coupled non-linear differential equations, numerical techniques for integration/derivatives, numerical methods for large arrays/matrices
 - Mathematica experience in Modules, large arrays/matrices, coupled nonlinear differential equations, numerical integration/differentiation, graphics
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Media Attention and Public Talks

1. “Snowmass: Creating a vision for the future of particle physics,” Illinois Center for Advanced Studies of the Universe website, <https://icasu.illinois.edu/news/snowmass-2022>
2. “Research Highlight: Peering inside the core of a neutron star using gravitational waves,” Illinois Center for Advanced Studies of the Universe website, <https://icasu.illinois.edu/news/46629>
3. “Can light melt atoms into goo?,” Symmetry Magazine, Aug. 2021
4. “Reverse Alchemy: Turning gold into the most perfect liquid,” Saturday Physics for Everyone, University of Illinois Urbana Champaign, Nov. 2020
5. “Fluid dynamics in the extreme - The Quark-Gluon Plasma,” Fluid Dynamics Night, University of Illinois Urbana-Champaign, April 2020
6. “The heaviest neutron star, or the lightest black hole?” Illinois Center for Advanced Studies of the Universe website, <https://icasu.illinois.edu/news/23111>
7. “Merging the communities of heavy ions and neutron stars” Illinois Center for Advanced Studies of the Universe website, <https://icasu.illinois.edu/news/heavy-ions-and-neutron-stars>
8. “Proton-Size Droplets of Primordial Soup May Be the Tiniest in the Universe”, Live Science, 12/17/2018
9. “Anisotropic flow in Xe–Xe collisions”, Cern Courier, 7/9/2018
10. “Noble collisions give new insights on heavy ion systems”, ATLAS Physics Briefings, 5/24/2018
11. “Alfred P. Sloan Research Fellowships 2018” The New York Times, 2/15/2018
12. “New model deepens understanding of the dynamics of quark-gluon plasmas”, Phys.org, 6/2/2017
13. “Flutuações quânticas ajudam a resolver mistério de 10 anos”, EXAME (popular Brazilian magazine- in Portuguese), 11/07/2016

14. “Quantum fluctuations help solve decade-old puzzle”,
Agência FAPESP, 8/03/2016
 15. “Quark-gluon plasma can be described by five-dimensional black hole”,
Agência FAPESP, 2/10/016
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Languages

1. English (native speaker)
 2. German (fluent)
 3. Portuguese (fluent)
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Invited Talks

1. *Nuclear Physics Panel*, PAX 2022, MIT, Boston, MA, August 2022
2. *Hot QCD, 4.5 hours of lectures at the National Nuclear Physics Summer School (NNPSS)*, Massachusetts Institute of Technology, **July 11 - 22**
3. *Peering inside neutron stars*, Campinas Colloquium, Campinas, Brazil, **July 2022**
4. *Dynamical search for the quantum chromodynamics critical point*, **Nuclear Physics Colloquium, Frankfurt, Germany, June 9, 2022**
5. *Far-from-equilibrium search for the QCD critical point*, Hydrodynamic Seminar, Frankfurt, Germany, June 7, 2022
6. *Heavy Ions Theory*, **Plenary Talk, LHCP conference, May 2022**
7. *Unlocking the secret life of quarks*, **Utrecht Colloquium, March 2022**
8. *Connecting Heavy-Ions to Neutron Stars*, The 1ST Workshop on Physics at High Baryon Density, UCLA, March 2022
9. *Quark Gluon Plasma at large densities*, **Plenary Talk, STAR annual meeting, February 2022**
10. *Initial shape engineering via final state correlations in (isobar) system scan*, RBRC Physics Opportunities from the RHIC Isobar Run, Brookhaven National Laboratory, Jan. 2021
11. *Lessons and open questions from heavy-ion experiments & small x*, Small-x Physics in the EIC Era, Brookhaven National Laboratory, Dec. 2021
12. *Dynamical search for the quantum chromodynamics critical point*, University of Minnesota, Dec. 2021
13. *Hydrodynamics, QGP, and QCD phase diagram*, RHIC-BES on-line seminar series, November 2021
14. *Recent excitement in heavy ion physics*, **Plenary Talk, EINN2021, November 2021**

15. *Heavy-ion Collisions 2.0: insights into nuclear structure, the smallest droplet of fluid, and large baryon densities*, FRIB for nuclear science seminar, Michigan State University, November 2021
16. *Connecting heavy-ions to neutron stars*, Nuclear, Particle, and Astrophysics (NPA) seminar series, Yale (virtual), October 2021
17. *What can we learn from heavy neutron stars?*, DRCC Seminar, UniCAMP (virtual), September 2021
18. *Unlocking the secret lives of quarks*, **Colloquium, University of Illinois Urbana Champaign, September 2021**
19. *What can low-energy heavy-ion collisions do for the physics of neutron stars?* RHIC Beam Energy Scan and Beyond, Brookhaven National Laboratory (virtual), August 2021
20. *QCD phase diagram and link to Neutron Stars: open questions*, Exploring Extreme Matter in the Era of Multimessenger Astronomy: from the Cosmos to Quarks, Panel+Overview, July 2021
21. *From Heavy-Ions to Neutron stars*, Exploring Extreme Matter in the Era of Multimessenger Astronomy: from the Cosmos to Quarks, July 2021
22. *New developments to localize the QCD critical point* 19th International Conference on Hadron Spectroscopy and Structure, July 2021
23. *Relativistic viscous hydrodynamics with BSQ conserved charges*, BES-Tea, June 2021
24. *From Heavy-Ions to Neutron Stars*, **Plenary Talk, RHIC & AGS Annual User's Meeting, Brookhaven National Laboratory, June 2019**
25. *Probing the QCD phase diagram in and out of equilibrium* Triangle Nuclear Theory Colloquium, May 2021
26. *Global Properties of QGP*, GHP April APS Meeting, April 2021
27. *The QCD Phase Diagram - Theoretical Perspectives*, April APS Meeting, April 2021
28. *What can we learn from heavy neutron stars?*, **Colloquium, RICE University, April 2021**
29. *D mesons as a probe of the smallest fluid in OO collisions*, Opportunities of OO and pO collisions at the LHC, Feb. 2021
30. *What can we learn from heavy neutron stars?*, Berkeley Heavy-ion Tea, Jan. 2021
31. *What can we learn from heavy neutron stars?* **Colloquium IAU/KU, Dec. 2020**
32. *Determining the smallest droplet of fluid using heavy flavor and jets*, XLIII Reuniao de Trabalho sobre Fisica Nuclear no Brasil, Virtual, Dec. 2020
33. *Search for the QCD critical point both in and out of equilibrium*, Ohio State Seminar, Nov 2020

34. *Reverse Alchemy: Turning gold into the most perfect liquid*, Saturday Physics for Everyone, University of Illinois Urbana Champaign, Nov. 2020
35. *What can we learn from heavy neutron stars?* **Colloquium, Lehigh University, Oct. 2020**
36. *Kinky neutron stars in light of GW190814* S@INT Seminar, Institute of Nuclear Theory - University of Washington, Sept 2020
37. *What can we learn from heavy neutron stars?* **Colloquium, Georgia State University, Sept 2020**
38. *Multi-particle cumulants from relativistic hydrodynamical at low and high pT* , Niels Bohr Institute, June 26, 2020
39. *Fluid dynamics in the extreme - The Quark-Gluon Plasma*, **Inaugural Theoretical Physics Colloquium, Hosted by Arizona State University, March 25, 2020**
40. *Fluid dynamics in the extreme - The Quark-Gluon Plasma*, Fluid Dynamics Night, University of Illinois Urbana-Champaign, April 2020
41. *System size scan of D meson RAA and v_n using PbPb, XeXe, ArAr, and OO collisions at LHC*, Santiago de Compostela, March 2020
42. *Viscous Hydrodynamics at the Beam Energy Scan*, Nuclear Seminar, University of Illinois Chicago, Feb 2020
43. *Fluid dynamics in the extreme - The Quark-Gluon Plasma*, **Colloquium, University of Illinois Chicago, Feb 2020**
44. *Fluid dynamics in the extreme - The Quark-Gluon Plasma*, **Colloquium, North Carolina State University, Feb 2020**
45. *Initializing Conserved Charges for BSQ hydrodynamics*, Theoretical Foundations of Relativistic Hydrodynamics, BANFF, Nov. 2019
46. *Understanding the nature of heavy-ion collisions in small systems*, Brookhaven National Laboratory, Aug. 30, 2019
47. *Conference Summary Talk*
Plenary Talk, Initial Stages 2019, Columbia University, New York, NY, June 2019
48. *Theory Summary Talk*
Plenary Talk, Strangeness in Quark Matter 2019, Bari, Italy, June 2019
49. *How to navigate the world of physics and improve its environment: Diversity and Career Development*,
Plenary Talk, RHIC & AGS Annual User's Meeting, Brookhaven National Laboratory, June 2019
50. *Exploiting baryon number and strangeness at the beam energy scan*, RHIC & AGS Annual User's Meeting, Brookhaven National Laboratory, June 2019
51. *Nature's Most Extreme Fluid*, **Vanderbilt Colloquium, April 11, 2019**

52. *Locating the Quantum Chromodynamic Critical Point*, Maryland Center for Fundamental Physics, University of Maryland, April 17, 2019
53. *Influences of nuclear structure on the “little bangs” from ultrarelativistic heavy ion collisions*, JLab Theory Seminar, Jefferson Laboratory, April 22, 2019
54. *“Sensitivity of D meson azimuthal anisotropies to system size and nuclear structure”*, 13th International Workshop on High-pT Physics in the RHIC/LHC era, University of Tennessee, Knoxville, TN, March 2019
55. *Phenomenological constraints on initial conditions in small systems*, Workshop on collectivity of small systems in high-energy collisions, Rice University, March 2019
56. *Sensitivity of D Meson Azimuthal Anisotropies to System Size and Nuclear Structure*, UCLA Jet 19 Santa Fe Jets and Heavy Flavor Workshop, Jan 29, 2019
57. *Influences of nuclear structure on the “little bangs” from ultrarelativistic heavy ion collisions*, Institute of Nuclear and Particle Physics Seminar, Ohio University, Nov. 26, 2018
58. *The Quest for Nature’s First and Most Perfect Liquid*, **Berea Undergraduate Research Symposium, Plenary Talk, Berea, KY, Oct. 19, 2018**
59. *Isolating Initial State Fluctuations from Medium Effects and Locating the Quantum Chromodynamic Critical Point*, Two Lectures, Institute of Theoretical Physics- University of Frankfurt, Germany, August 2018.
60. *Locating the Quantum Chromodynamic Critical Point*, INT Seminar Series, University of Washington, Seattle, WA, June 7, 2018
61. *Precision Numerical Simulations of Nature’s Most Extreme Fluid*, High Energy/Medium Energy Physics Seminar, University of Illinois Urbana-Champaign, IL, May 22, 2018
62. *What can we learn from R_{AA} vs high p_T flow observables in heavy-ion collisions?*, Santa Fe Jets and Heavy Flavor Workshop, Santa Fe, NM, January 29-31, 2018
63. *Effect of the QCD equation of state on flow observables in heavy ion collisions*, **Triangle Nuclear Theory Colloquium, Duke University, North Carolina, USA, Jan. 16, 2018**
64. *Hydrodynamic modelling of heavy-ion collisions*, 2017 Fall Meeting of the APS Division of Nuclear Physics, Pittsburgh, PA, Oct. 27, 2017
65. *What can we learn from flow observables in heavy-ion collisions?*, RIKEN/BNL Research Center Lunch Talk, Brookhaven National Laboratory, Oct. 12th, 2017
66. *Isolating Initial State Fluctuations from Medium Effects*
Plenary Talk, Initial Stages 2017, Cracow, Poland, Sep. 2017
67. *Understanding Strangeness using Lattice QCD*
Seminar, Universidade Federal do Rio de Janeiro, Instituto de Fisica, July 2017

68. *Hot Topics in Heavy Ion Collisions*
Plenary Talk, RHIC & AGS Annual User's Meeting, Brookhaven National Laboratory, June 22, 2017
69. *Scanning the perfect fluid with π 's to dileptons*
Rice University, May 2, 2017
70. *The Quest for Nature's First and Most Perfect Liquid*
Lawrence Technological University, March 3, 2017
71. *Overview of relativistic hydrodynamics*
ALICE Journal Club, Feb. 23, 2017
72. *Jet modifications in event-by-event hydrodynamically evolving media*
Plenary Talk, Quark Matter 2017, Chicago, IL, Feb. 10, 2017
73. *In search of the perfect liquid (Quark Gluon Plasma)*
Nuclear Seminar, Rutgers University, Jan. 19, 2017
74. *Finding Missing Resonances using Lattice QCD*
Colloquium, Kent State University, Kent, Ohio, Dec. 2016
75. *Implications of Missing Resonances (Hagedorn States) in Heavy Ions Collisions*
YSTAR2016, Jefferson Laboratory, Nov. 2016
76. *Finding Missing Resonances using Lattice QCD*
CPF seminar, University of Texas, Austin, Texas, Nov. 2016
77. *Going beyond the R_{AA} to v_2 puzzle*
Wayne State University, Detroit, Michigan, Nov. 2016
78. *Overview of the EoS/Fluctuations at Exploring the QCD Phase Diagram through Energy Scans*
Overview Talk, Beam Energy Scan Theory (BEST) Collaboration, Oct. 26, 2016
79. *Resolving the R_{AA} to v_2 puzzle*
Plenary Talk, Hard Probes 2016, Wuhan, China, Sept 26, 2016
80. *Hydrodynamics Overview*
Overview Talk, Hot Quarks 2016, Sept. 2016
81. *Mini-Course on Heavy-ion Collisions*
Lecture Series, University of Sao Paulo, Summer 2016
82. *Finding Missing Resonances using Lattice QCD*
IFGW, Unicamp, Aug 2016
83. *Finding Missing Resonances using Lattice QCD*
Physics Colloquium, University of Sao Paulo, Aug. 2nd, 2016
84. *Event-by-event hydrodynamics + jet energy loss: A solution to the $R_{AA} \otimes v_2$ puzzle*
HEAP Seminars, UCLA, Invited Speaker, June 24, 2016

85. *Suppression of baryon diffusion and transport in a baryon rich strongly coupled QGP*
2016 RHIC & AGS Annual Users' Meeting, Brookhaven National Laboratory, June 7, 2016
86. *Event-by-event hydrodynamics + jet energy loss: A solution to the $R_{AA} \otimes v_2$ puzzle*
2016 IUB Symposium on Strongly Interacting Matter, Center of Exploration for Energy and Matter, May 11, 2016
87. *Event-by-event hydrodynamics + jet energy loss: A solution to the $R_{AA} \otimes v_2$ puzzle*
Heavy Ion Tea, Lawrence Berkeley National Laboratory, Berkeley, CA, May 3, 2016
88. *Soft-Hard Event Engineering (SHEE) at Ultrarelativistic Heavy Ion Collisions*
Nuclear Theory Seminar, Texas A&M, College Station, TX, April 22, 2016
89. *Overview of Heavy-Ion Collisions*
Heavy-ion seminar, University of Houston, Houston, TX Dec. 10 2015
90. *Linear and cubic response to the initial eccentricity in heavy-ion collisions*
Invited Nuclear Theory Seminar, Stony Brook University, Stony Brook, NY Nov. 24th 2015.
91. *The unreasonable effectiveness of hydrodynamics in heavy ion collisions*
Physics Seminar, Lehigh University, Bethlehem, PA USA, Oct. 13th 2015.
92. *Sensitivity of flow harmonics to sub-nucleonic scale fluctuations*
Quark Matter 2015, Kobe, Japan, Plenary Flash Talk, Sept 2015.
93. *Applicability and energy scale of relativistic hydrodynamics in heavy ion collisions*
Looking Beyond 10¹⁰ Mini-Bangs, CGCs, Perfect Fluids, and Jet Tomo/Holography, Wuhan, China, Talk, Sept. 2015.
94. *The unreasonable effectiveness of hydrodynamics in heavy ion collisions*
Nuclear Particle Astrophysics (NPA) Seminar, Wright Lab at Yale University, September 10th, 2015
95. *Extracting η/s in the presence of bulk viscosity in heavy ion collisions*
CIPANP 2015, Vail, CO USA, May 2015.
96. *Nonzero initial state flow, granularity, and its effects on flow harmonics*
Seminar in Hadronic Physics, McGill University, Montreal, CA, April 2015.
97. *Nonzero Initial State Flow, Granularity, and its Effects on Flow Harmonics*
Nuclear Physics Seminar, The Ohio State University, Columbus, Ohio, March 2015.
98. RIKEN/BNL Research Center Lunch Talk, Brookhaven National Laboratory, Nov. 20th, 2014
99. *Bulk viscosity Effects in Event-By-Event Relativistic Hydrodynamics*
Nuclear Physics Seminar, The Ohio State University, Columbus, Ohio, Jan. 2014.

100. *Bulk viscosity Effects in Event-By-Event Relativistic Hydrodynamics*
XXXVI Brazilian Meeting on Nuclear Physics, Maresias, Sao Sebastiao, SP, Brazil, Sept. 2013.
101. *v-USPhydro: Bulk Viscosity Effects in Event-by-Event Hydrodynamics*
IFGW, Unicamp, April 2013.
102. *v-USPhydro: Bulk Viscosity Effects in Event-by-Event Hydrodynamics*
Institute of Theoretical Physics- University of Frankfurt, Germany, Sept 2012.
103. *v-USPhydro: Bulk Viscosity Effects in Event-by-Event Hydrodynamics*
GRHAFITE Seminar, FEP Universidade de Sao Paulo, SP Brazil, Aug. 28th, 2012
104. *Effects of Hagedorn States in Heavy-Ion Collisions*
Workshop on Excited Hadronic States and the Deconfinement Transition 2011, Thomas Jefferson National Accelerator Facility, Newport News, VA, February 23-25, 2011

Talks

105. *System size scan of D meson RAA and vn using PbPb, XeXe, ArAr, and OO collisions at LHC*, Hard Probes 2020, Austin, Texas (online due to COVID 19), June 2020
106. *System size scan of D meson RAA and vn using PbPb, XeXe, ArAr, and OO collisions at LHC*, Winter Workshop on Nuclear Dynamics, Puerto Vallarta, Mexico, March, 2020
107. *Shrinking the Quark Gluon Plasma*, Winter Workshop on Nuclear Dynamics, Beavery Creek, CO, Jan 11th, 2019
108. *Freeze-out temperature from net-Kaon fluctuations at RHIC*, **Plenary Talk, The Critical Point and Onset of Deconfinement Conference 2018, Corfu, Greece, Sept 2018.**
109. *Ultracentral heavy-ion collisions as a probe for nuclear structure*, MIAPP 2018 Program for Heavy Ion Collisions, Munich, Germany, Sept 2018.
110. *Influence of the QCD equation of state in small systems*, CIPANP 2018, Palm Springs, CA USA, May 2018.
111. *Equation of state and transport coefficients at finite baryo-chemical potential*, Confirmation, Exploring the QCD Phase Diagram through Energy Scans, INT, University of Washington, Sept-Oct. 2016
112. *Strange partial pressures from Lattice QCD*
Strangeness in Quark Matter 2016, UC Berkeley, June 2016
113. *Soft-Hard Event Engineering (SHEE) at RHIC and LHC*
32nd Winter Workshop on Nuclear Dynamics, Guadeloupe, March 2016
114. *Sensitivity of flow harmonics to subnucleonic scale fluctuations in heavy ion collisions*
Mini-Conference on Heavy Ions, Columbia University, August 2015
115. *Extracting η/s in the presence of bulk viscosity in heavy ion collisions*
Correlations and Fluctuations in p+A and A+A Collisions, INT University of Washington, July 2015.

116. *Viscous Effects on the Mapping of the Initial to Final State in Heavy Ion Collisions*
Ohio-Region Section of the APS (OSAPS) Spring 2015 Meeting, March 2015
117. *Bulk viscosity-driven suppression of shear viscosity effects on the flow harmonics at RHIC*
Initial Stages, Napa Valley, CA, December 2014
118. *Bulk viscosity-driven suppression of shear viscosity effects on the flow harmonics at RHIC*
Jet-Collaboration Online Seminar, Nov 3rd, 2014
119. *Suppression of the LHC p/π ratio due to the QCD mass spectrum*
Quark Matter 2014, Damstadt, Germany, May 2014.
120. *v -USPhydro: Bulk Viscosity Effects on Event-by-Event Relativistic Hydrodynamics*
Winter Workshop 2013, Squaw Valley, CA, USA, Feb. 2013.
121. *v -USPhydro: Bulk Viscosity Effects on Event-by-Event Relativistic Hydrodynamics*
Reuniao de Trabalho sobre Interacoes Hadronicas 2012, CBPF, Rio de Janeiro, RJ Brazil - Rio de Janeiro, RJ Brazil December 2012.
122. *Sensitivity of the Hadron Gas Model to the Hagedorn Spectrum*
Reuniao de Trabalho sobre Interacoes Hadronicas 2011, CBPF, Rio de Janeiro, RJ Brazil December 2011.
123. *Particle Ratios and the QCD Critical Temperature*
Strange Quark Matter 2009, Buzios, Brazil, Sept 2009
124. *Chemical Equilibration and Transport Properties of Hadronic Matter near T_c*
Quark Matter 2009, Knoxville, TN, USA April 2009.
125. *Particle Ratios and the QCD Critical Temperature*
The statistical model of hadron formation and the nature of the QCD hadronization process, ECT*, Sept 1-5 2008.
126. *Fast chemical equilibration of hadrons in an expanding fireball*
Yale-Columbia Day, May 2008.
127. *Effects of Hagedorn States in Heavy-Ion Collisions*
Columbia University, 2008.
128. *Fast chemical equilibration of hadrons in an expanding fireball*
24th Winter Workshop on Nuclear Dynamics, South Padre Island, Texas, 5-12 April 2008.
129. *Chemical Equilibration at the Hagedorn Temperature*
45th International Winter Meeting on Nuclear Physics, Bormio, Italy, 14-21 Jan 2007.
130. Cancelled due to COVID19 *Beam Energy Scan theory, Plenary Talk, RHIC & AGS Annual User's Meeting, Brookhaven National Laboratory, June 2020*
131. Cancelled due to COVID19 *N/A, Mini-Workshop: Relativistic Fluids at the Intersection of Mathematics and Physics, Munich, March 2020*

COVID19
Disrupted
Invited Talks

Posters

132. *Sensitivity of flow harmonics to sub-nucleonic scale fluctuations*
Quark Matter 2015, Kobe, Japan, Sept 2015.
 133. *Extracting the shear viscosity of the QGP in the presence of bulk viscosity*
Quark Matter 2015, Kobe, Japan, Sept 2015.
 134. *Competing effects of shear and bulk viscosity within relativistic hydrodynamics*
Quark Matter 2014, Damstadt, Germany, May 2014.
 135. *v-USPhydro: Bulk Viscosity Effects on Event-by-Event Relativistic Hydrodynamics*
Relativistic Aspects of Nuclear Physics, Rio de Janeiro, RJ Brazil, Sept. 2013.
 136. *Bulk Viscosity Effects on Event-by-Event Relativistic Hydrodynamics*
Quark Matter 2012, Washington DC, USA, Aug. 2012.
 137. *Fast chemical equilibration of hadrons in an expanding fireball*
Quark Matter 2008, Feb 4-10, 2008.
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Peer Reviewed Publications

1. M. Hippert, J. Setford, H. Tan, D. Curtin, J. Noronha-Hostler and N. Yunes, “Mirror Neutron Stars: How QCD can be used to study dark matter through gravitational waves,” [arXiv:2207.13063 [nucl-th]]. Accepted in Phys.Rev.D
2. C. Plumberg, D. Almaalol, T. Dore, J. Noronha and J. Noronha-Hostler, “Causality violations in realistic simulations of heavy-ion collisions,” Phys. Rev. C 105, L061901.
3. H. Tan, V. Dexheimer, J. Noronha-Hostler and N. Yunes, “Finding Structure in the Speed of Sound of Supranuclear Matter from Binary Love Relations,” Phys. Rev. Lett. 128, no.16, 161101 (2022).
4. E. McLaughlin, J. Rose, T. Dore, P. Parotto, C. Ratti and J. Noronha-Hostler, “Building a testable shear viscosity across the QCD phase diagram,” Phys. Rev. C 105, no.2, 024903 (2022).
5. P. Carzon, M. Martinez, M. D. Sievert, D. E. Wertepny and J. Noronha-Hostler, “Monte Carlo event generator for initial conditions of conserved charges in nuclear geometry,” Phys. Rev. C **105**, no.3, 034908 (2022).
6. H. Tan, T. Dore, V. Dexheimer, J. Noronha-Hostler and N. Yunes, “Extreme matter meets extreme gravity: Ultraheavy neutron stars with phase transitions,” Phys. Rev. D 105, no.2, 023018 (2022).
7. P. Carzon, M. D. Sievert and J. Noronha-Hostler, “Impact of multiplicity fluctuations on entropy scaling across system size,” Phys. Rev. C 105, no.1, 014913 (2022).
8. BEST collaboration summary: X. An, M. Bluhm, L. Du, G. V. Dunne, H. Elfner, C. Gale, J. Grefa, U. Heinz, A. Huang and J. M. Karthein, *et al.* “The BEST framework for the search for the QCD critical point and the chiral magnetic effect,” Nucl. Phys. A 1017, 122343 (2022)

9. E. R. Most, S. P. Harris, C. Plumberg, M. G. Alford, J. Noronha, J. Noronha-Hostler, F. Pretorius, H. Witek and N. Yunes, “Projecting the likely importance of weak-interaction-driven bulk viscosity in neutron star mergers,” *Mon. Not. Roy. Astron. Soc.* 509, no.1, 1096-1108 (2021).
10. N. Summerfield, B. N. Lu, C. Plumberg, D. Lee, J. Noronha-Hostler and A. Timmins, “ $^{16}\text{O}^{16}\text{O}$ at RHIC and the LHC comparing α clustering vs substructure,” *Phys. Rev. C* 104, L041901 (2021).
11. J. Grefa, J. Noronha, J. Noronha-Hostler, I. Portillo, C. Ratti and R. Rougemont, “Hot and dense quark-gluon plasma thermodynamics from holographic black holes,” *Phys. Rev. D* 104, no.3, 034002 (2021).
12. J. M. Kartheim, D. Mroczek, A. R. Nava Acuna, J. Noronha-Hostler, P. Parotto, D. R. P. Price and C. Ratti, “Strangeness-neutral equation of state for QCD with a critical point,” *Eur. Phys. J. Plus* 136, no.6, 621 (2021)
13. S. Rao, M. Sievert and J. Noronha-Hostler, “Baseline predictions of elliptic flow and fluctuations at the RHIC Beam Energy Scan using response coefficients,” *Phys. Rev. C* 103, no.3, 034910 (2021).
14. V. Dexheimer, J. Noronha, J. Noronha-Hostler, C. Ratti and N. Yunes, “Future Physics Perspectives on the Equation of State from Heavy Ion Collisions to Neutron Stars,” **Invited Review**, *J.Phys.G* 48 (2021) 7, 073001.
15. D. Mroczek, J. Noronha-Hostler, A. R. N. Acuna, C. Ratti, P. Parotto and M. A. Stephanov, “Quartic cumulant of baryon number in the presence of QCD critical point,” *Phys. Rev. C* 103, no.3, 034901 (2021).
16. G. Giacalone, F. G. Gardim, J. Noronha-Hostler and J. Y. Ollitrault, “Skewness of mean transverse momentum fluctuations in heavy-ion collisions,” *Phys. Rev. C* 103, no.2, 024910 (2021).
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21. R. Katz, C. A. G. Prado, J. Noronha-Hostler and A. A. P. Suaide, “System size scan of D meson R_{AA} and v_n using PbPb, XeXe, ArAr, and OO collisions at LHC,” **Rapid Communications:** *Phys. Rev. C* 102, no.4, 041901 (2020).
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24. Paolo Parotto, Marcus Bluhm, Debora Mroczek, Marlene Nahrgang, Jacquelyn Noronha-Hostler, Krishna Rajagopal, Claudia Ratti, Thomas Schaefer, Mikhail Stephanov, “QCD equation of state matched to lattice data and exhibiting a critical point singularity,” *Phys. Rev. C* 101, no. 3, 034901 (2020).
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