# **AGNIESZKA SORENSEN**

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#### **EXPERIENCE**

## Assistant professor – FRIB/NSCL Faculty

Facility for Rare Isotope Beams, Michigan State University

- · Investigated flexible momentum-dependent potentials in microscopic hadronic transport.
- Worked on building a framework for joint extraction of the equation of state from heavy-ion collision and astrophysical data using Bayesian analysis and machine learning methods.

#### Postdoctoral scholar

Institute for Nuclear Theory, University of Washington

- · Obtained a constraint on the QCD equation of state using Bayesian analysis of microscopic hadronic transport with flexible potentials and new experimental data.
- · Investigated constraints on the speed of sound in nuclear matter from neutron star and heavy-ion data.
- Studied development of fluctuations in hadronic transport simulations.
- Used finite-size scaling of proton fluctuations to constrain the location of the QCD critical point.

#### Graduate student affiliate

Nuclear Science Division, Lawrence Berkeley National Laboratory

- · Developed a flexible, relativistic vector-density-dependent (VDF) mean-field potential, with emphasis on applications to studies of the dynamical evolution of heavy-ion collisions.
- Modified the hadronic transport code SMASH to include the VDF model.
- · Used SMASH with VDF model to investigate thermodynamic behavior of hot and dense nuclear matter.

#### Researcher

University of Wrocław, Poland

· Researched thermal behavior of pions and sigma mesons in the Polyakov-loop Nambu–Jona-Lasinio model.

### **EDUCATION**

### University of California, Los Angeles

Ph.D. in Physics. Thesis: Density Functional Equation of State and Its Application to the Phenomenology of Heavy-Ion Collisions.

Thesis advisors: Prof. Huan Zhong Huang (UCLA) and Dr. Volker Koch (LBNL).

#### University of Wrocław, Poland

M.S. in Physics. Thesis: Generalized Beth-Uhlenbeck Approach to a Quark-Meson Plasma in the PNJL Model.

Thesis advisor: Prof. David Blaschke.

# University of Wrocław, Poland

**B.S.** in Physics

2017/04 - 2021/09

202I/I2 - 2024/09

2024/10 - PRESENT

2012/10 - 2013/06

2010/10 - 2012/08

2007/10 - 2010/09

2013/07 - 2021/09

## AWARDS

2023 American Physical Society Dissertation Award in Nuclear Physics	2022/10
UCLA Dissertation Year Fellowship	2020/06
UCLA Department of Physics and Astronomy Outstanding Teaching Award	2016/12

### ACCEPTED OR PENDING PROPOSALS

Department of Energy, Office of Science, Nuclear Physics: Early Career Research Program (ECRP)
(DE-FOA-0003450) 2025/04
(in progress) Project title: Microscopic transport, machine learning, and Bayesian analysis for extracting the dense nuclear matter equation of state from heavy-ion collisions at RHIC and FRIB Submitted by: Agnieszka Sorensen
Department of Energy, Office of Science, Nuclear Physics: Artificial Intelligence and Machine Learning Applied to Nuclear Science and Technology (DE-FOA-0003458) 2025/01 (pending)
Project title: Physics-informed AI to Bridge the Laboratory and Astrophysical observations for Dense Environments
Submitted by: Jacquelyn Noronha-Hostler (UIUC, lead PI), Nicolás Yunes (UIUC), Agnieszka Sorensen (MSU, local PI), Kyle Godbey (MSU)
Institute for Nuclear Theory (INT) workshop proposal (accepted)2024/08Workshop title: The QCD Critical Point: Are we there yet?2014/08Submitted by: Agnieszka Sorensen, Vladimir Skokov, Helen Caines2014/08planned for Fall 20252014/08
NERSC 2025 allocation through Energy Research Computing Allocations Process 2024/10 (accepted)
Project title: Dynamical simulations of relativistic heavy-ion collisions in the Fixed-Target program of the RHIC Beam Energy Scan II (renewal) Submitted by: Agnieszka Sorensen Allocation: 65,000 CPU node hours (8,320,000 CPU hours)
IRL-NPA workshop proposal (accepted)2024/05Workshop title: Dense Nuclear Matter Equation of State from Theory and Experiments Submitted by: Francesca Gulminelli, Agnieszka Sorensen, Caterina Ciampi, Kyle Brown (workshop website)
NERSC 2024 allocation through Energy Research Computing Allocations Process 2023/10
(accepted) Project title: Dynamical simulations of relativistic heavy-ion collisions in the Fixed-Target program of the RHIC Beam Energy Scan II Submitted by: Agnieszka Sorensen

Allocation: 40,000 CPU node hours (5,120,000 CPU hours)

#### Institute for Nuclear Theory (INT) workshop proposal (accepted) Workshop title: Dense Nuclear Matter Equation of State from Heavy-Ion Collisions Submitted by: Dmytro Oliinychenko, Agnieszka Sorensen, Scott Pratt (workshop website, highlights report)

#### LEADERSHIP AND COMMUNITY ENGAGEMENT

#### Member of the Executive Committee for the Mentorships for Inclusive Nuclear Theory (MINT) program at the INT 2024/09 – PRESENT

Institute for Nuclear Theory, University of Washington

- · Helped create the blueprint for the program structure, goals, and advertising to the community.
- · Initiated discussions between MINT and the APS about creating an APS-wide academic mentoring program.

#### Member of the Division of Nuclear Physics Mentoring Award Committee 2024/06 – PRESENT American Physical Society

- · Participated in the Mentoring Award Committee meetings.
- · Led the effort to establish a robust rubric for scoring the submissions and identifying the recipient which enables a comprehensive review of the candidates' contributions to a welcoming and supportive environment, mentoring of early-career scientists from under-represented groups, and leadership in developing nuclear science research and career development opportunities for students and postdocs.

#### Member of the Division of Nuclear Physics Education Committee 2023/08 – PRESENT American Physical Society

- · Participated in the Education Committee activities aimed at engaging and supporting undergraduate and graduate students, postdocs, and early career members of the nuclear physics community.
- · Led the organization of a (hybrid) Professional Development Workshop for Early-Career Researchers at the 2024 DNP meeting, comprised of sessions devoted to "Applying to a Tenure-Track/Lab Scientist Position" and "Funding Resources for Early-Career Scientists".
- · Leads the organization of a (hybrid) Professional Development Workshop for Early-Career Researchers at the 2025 DNP meeting, comprised of sessions devoted to "Careers Beyond Academia" and "Thriving As a Physics Graduate Student".
- Leads establishing a strategic plan and best practices for supporting the new DNP "Nuclear Physics Education and Outreach" sorting category.

## Co-organizer of the INT Undergraduate Research Network (INTURN)

Institute for Nuclear Theory, University of Washington

- Helped shape the program goals and identified ways of recruiting students from diverse backgrounds.
- · Discussed and executed a timeline of activities for starting the program in early 2024.

#### Member of the Division of Nuclear Physics Executive Committee

#### American Physical Society

- · Participated in the Executive Committee meetings.
- · Relayed concerns of the early career members of the nuclear physics community.

2021/09

2023/04 - 2024/04

2023/08 - 2024/02

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Agnieszka Sorensen · Curriculum Vitae

• As a member of the Publications Committee, advocated to the APS journal editors for establishing tools for authors and reviewers that would help address gender disparities in citations.

#### Community leader in the U.S. Long Range Plan process

- · Took on a leadership role in advocating for microscopic transport studies of heavy-ion collisions.
- · Attended and presented at the NSAC Long Range Plan Town Hall meeting for Hot and Cold QCD.
- Attended (virtually) and presented at the NSAC Long Range Plan Town Hall meeting for Nuclear Structure, Reactions, and Astrophysics.
- As the leading editor and one of the key contributors, spearheaded an interdisciplinary white paper in support of using heavy-ion collision studies to extract the nuclear matter equation of state.
- · Provided contributions and in-depth comments to three other white papers.

# Member of the Physics Department Climate and Diversity Committee2022/09 - 2023/08University of Washington2022/09 - 2023/08

- Within the Code of Conduct and Trainings subcommittee, worked on updating the department Code of Conduct to include ambitious expectations for creating inclusive communities as well as practical resources and avenues of conflict resolution, contributed to the development of practical trainings for harassment prevention and bystander intervention for postdocs and faculty, and supported inviting researchers working on Physics Education Research and Diversity, Equity, and Inclusion to present at departmental colloquia.
- Within the Community-Building Events subcommittee, organized Physics Department Friendsgiving Day, Pi Day Celebration, and Supporting Women+ in Physics Workshop.

#### Peer review

2021/10 – PRESENT

• Reviewer for Nuclear Physics A, Physical Review C, European Physical Journal A, Nature Astronomy, Physical Review D, Nature Communications Physics.

### Student/Postdoc Member of the RHIC & AGS Users' Executive Committee 2021/06 - 2023/08

- Actively participated in several initiatives and communications, including formulating a list of Committee's standing requests on the quality of life and diversity, equity, and inclusion, presented at the DOE 2022 RHIC Science and Technology review.
- · Co-organized the Beam Energy Scan workshop, the Diversity, Equity, and Inclusion workshop, and the poster session for the 2022 RHIC & AGS Users' Meeting.
- · Co-organized the poster session for the 2023 RHIC & AGS Users' Meeting.

#### Organizer of the BES-Tea seminar series

• Initiated and led biweekly online seminar series focusing on open and in-depth discussions of presented subjects, centered around topics relevant to the Beam Energy Scan program at RHIC, HADES experiment at GSI, future experiments at FAIR and FRIB, and similar programs around the world.

### **Representative for Physics Graduate Students**

Department of Physics and Astronomy, UCLA

· Led the graduate students' efforts to establish the position of a physics graduate student representative.

#### 2021/04 - 2023/09

2016/02 - 2017/06

2022/09 - 2023/02

- Worked with the Faculty Graduate Student Advisor and administrative offices to resolve needs and concerns of physics graduate students' community.
- · Initiated and led the graduate student contribution to the departmental 8-year review in 2016.
- Served as a member of the departmental Graduate Affairs Committee for the academic year 2016- 2017.

#### **TEACHING AND MENTORING ROLES**

#### Postdoctoral advisor

Facility for Rare Isotope Beams, Michigan State University

· As an advisor for Dr. Oleh Savchuk, identified research goals and advised on professional development.

#### Mentor for the Summer Research Program

Louis Stokes Alliance for Minority Participation, University of Washington

- Designed a 10-week-long research project aimed at engaging a junior or senior level undergraduate student with research on the nuclear matter equation of state and heavy-ion collisions.
- Mentored a student during the program, providing introductory materials, holding daily meetings, discussing the student's results, and helping create a poster showing the outcome of the research project.
- · Organized a weekly meeting for all undergraduate students taking part in summer research at the INT.

#### **Instructor for Teaching College Physics**

Office of Instructional Development, UCLA

- Revised and led the course for new Teaching Assistants at the Physics and Astronomy department, focusing on practical approaches to fostering inclusive teaching methods and high teaching ethics.
- · Established effective feedback practices for a systematic evaluation of in-class performance of new TAs.

#### **Teaching Assistant**

Department of Physics and Astronomy, UCLA

- · Used student-centered teaching to optimize student learning and create student-empowering classrooms.
- · Created and distributed extensive learning resources for a large variety of undergraduate physics courses.
- Taught courses from the lower division (Mechanics; Oscillations, Waves and Fields; Electrodynamics and Optics; Quantum and Statistical Mechanics), upper division (Electricity and Magnetism I; Electricity and Magnetism II; Thermodynamics), and graduate (Teaching College Physics) level.
- · Nominated for the 2018 UCLA-wide Distinguished Teaching Assistant award.

#### TEACHING AND MENTORING WORKSHOPS TAKEN

<b>Question-Persuade-Refer suicide prevention workshop "Ask a Question, Save a Life"</b> <i>Facility for Rare Isotope Beams, East Lansing, MI</i>	2025/02
<b>The Inclusive STEM Teaching Project</b> edX online learning platform	2025/02
<b>Developing Early Career Physics Mentors workshop</b> 2024 Fall Meeting of the APS Division of Nuclear Physics, Boston, MA	2024/10

2024/11 – PRESENT

2016/09 - 2018/06

2013/09 - 2018/06

2023/06 - 2023/08

<b>Physics Postdoc Anti-Harassment Training</b> Empowering Prevention & Inclusive Communities, Safe Campus, University of Washington	2022/05
Annual Teaching Assistant Conference UCLA Teaching and Learning Center	2017/09
<b>Educational Development Summer Workshop for Teaching Assistant Coordinators</b> <i>Center for Education Innovation &amp; Learning in the Sciences, UCLA</i>	2017/08
Educational Development Summer Workshop for Teaching Assistant Coordinators Center for Education Innovation පී Learning in the Sciences, UCLA	2016/08
CONFERENCES AND WORKSHOPS ORGANIZED	
INT program: The QCD Critical Point: Are We There Yet? (lead organizer)	2025/10
University of Washington, Seattle, October 27-INovember 7, 2025	
IRL-NPA/FRIB workshop: Dense Nuclear Matter Equation of State from Nuclear Experiments	2024/10
<b>(lead local organizer, member of Organizing Committee)</b> Facility for Rare Isotope Beams, Michigan State University, October 28-November 1, 2024	
Professional Development for Early-Career Scientists workshop at the 2024 Fall M Division of Nuclear Physics of the American Physical Society (lead organizer) Boston, October 7, 2024	eeting of the 2024/10
Supporting Women+ in Physics Workshop	2023/05
<b>(co-organizer)</b> University of Washington, Seattle, May 5-6, 2023	/
INT workshop: Dense Nuclear Matter Equation of State from Heavy-Ion Collisions (lead organizer) University of Washington, Seattle, December 5-9, 2022	2022/12
<b>Diversity, Equity, and Inclusion workshop at the 2022 RHIC &amp; AGS Users' Meeting</b> (lead co-organizer) Virtual meeting hosted by the Brookhaven National Laboratory, June 7-10, 2022 Brookhaven Newsroom press release	2022/06
Beam Energy Scan workshop at the 2022 RHIC & AGS Users' Meeting (lead organizer) Virtual meeting hosted by the Brookhaven National Laboratory, June 7-10, 2022	2022/06
31st Max Born Symposium and HIC for FAIR Workshop: Three Days of Critical Behavior in Hot and Dense QCD (lead co-organizer)	2013/06

University of Wrocław, Wrocław, Poland, June 14-16, 2013

Lądek Zdrój, Poland, February 4-11, 2012

#### PUBLICATIONS

B. A. BROWN et al.

"Motivations for Early High-Profile FRIB Experiments" arXiv:2410.06144

#### A. SORENSEN, P. SORENSEN

"Locating the critical point for the hadron to quark-gluon plasma phase transition from finite-size scaling of proton cumulants in heavy-ion collisions" arXiv:2405.10278

L. DU, **A. SORENSEN**, M. STEPHANOV "The QCD phase diagram and Beam Energy Scan physics: a theory overview" Int. J. of Mod. Phys. E 33 (2024) 7, 2430008, arXiv:2402.10183

### N. YAO, A. SORENSEN, V. DEXHEIMER, J. NORONHA-HOSTLER

"Structure in the speed of sound: from neutron stars to heavy-ion collisions" Phys. Rev. C 109 (2024) 6, 065803, arXiv:2311.18819

P. ACHENBACH *et al.* "The Present and Future of QCD" Nucl. Phys. A 1047 (2024) 122874, arXiv:2303.02579

### A. SORENSEN et al.

"Dense Nuclear Matter Equation of State from Heavy-Ion Collisions" Progr. Part. Nucl. Phys. 134 (2024) 104080, arXiv:2301.13253

A. LOVATO *et al.* "Long Range Plan: Dense matter theory for heavy-ion collisions and neutron stars" arXiv:2211.02224

D. ALMAALOL *et al.* "QCD Phase Structure and Interactions at High Baryon Density: Completion of BES Physics Program with CBM at FAIR" arXiv:2209.05009

J. STEINHEIMER, A. MOTORNENKO, **A. SORENSEN**, Y. NARA, V. KOCH, M. BLEICHER "The high-density equation of state in heavy-ion collisions: constraints from proton flow" Eur. Phys. J. C 82 (2022) 10, 911, arXiv:2208.12091

D. OLIINYCHENKO, A. SORENSEN, V. KOCH, L. MCLERRAN

"Sensitivity of Au+Au collisions to the symmetric nuclear matter equation of state at 2-5 nuclear saturation densities"

Phys. Rev. C 108 (2023) no.3, 034908, arXiv:2208.11996

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2012/02

### H. WOLTER et al.

"Transport Model Comparison Studies of Intermediate-Energy Heavy-Ion Collisions" Progr. Part. Nucl. Phys. 125 (2022) 103962, arXiv:2202.06672

#### A. SORENSEN

"Density Functional Equation of State and Its Application to the Phenomenology of Heavy-Ion Collisions" UCLA (2021) arXiv:2109.08105

X. AN *et al.* "The BEST framework for the search for the QCD critical point and the chiral magnetic effec" Nucl. Phys. A 1017 (2022) 122343, arXiv:2108.13867

#### A. SORENSEN, D. OLIINYCHENKO, V. KOCH, L. MCLERRAN

"The speed of sound and baryon cumulants in heavy-ion collisions"

Phys. Rev. Lett. 127 (2021) no.4, 042303, arXiv:2103.07365

#### M. COLONNA et al.

"Comparison of heavy-ion transport simulations: Mean-field dynamics in a box" Phys. Rev. C 104 (2021) no.2, 024603, arXiv:2106.12287

#### A. SORENSEN, V. KOCH

"Phase transitions and critical behavior in hadronic transport with a relativistic density functional equation of state"

Phys. Rev. C 104 (2021) no.3, 034904, arXiv:2011.06635

# D. BLASCHKE, A. DUBININ, A. RADZHABOV, A. WERGIELUK

"Mott dissociation of pions and kaons in hot, dense quark matter" Phys. Rev. D 96 (2017) no.9, 094008, arXiv:1608.05383

#### A. WERGIELUK, D. BLASCHKE, Y. L. KALINOVSKY, A. FRIESEN

"Pion dissociation and Levinson's theorem in hot PNJL quark matter" Phys. Part. Nucl. Lett. 10 (2013), 660-668, arXiv:1212.5245

#### **INVITED TALKS**

<b>STAR Collaboration meeting</b> <i>Brookhaven National Laboratory, Upton, NY</i> "Constraining the equation of state from flow and the QCD critical point from proton fluctuation	2024/12 ns"
<b>WPCF 2024 (17th Workshop on Particle Correlation and Femtoscopy)</b> Laboratoire des 2 Infinis - Toulouse, Toulouse, France "Scaling Analysis of Proton Cumulants and the QCD Critical Point"	2024/11
2024 Fall Meeting of the Division of Nuclear Physics of the American Physical Society Boston, MA "The QCD Phase Diagram and Beam Energy Scan Physics: A Theory Overview"	2024/10
NN2024: 14th Nucleus-Nucleus Collisions Conference Whistler, BC, Canada	2024/08

"Extracting Properties of Dense Nuclear Matter from Heavy-Ion Collisions"

2023 Fall Meeting of the Division of Nuclear Physics of the American Physical S Physical Society of Japan	ociety and the 2023/II
<i>Waikoloa, HI</i> "Extracting the equation of state of symmetric nuclear matter from flow observables in heav	w-ion collisions"
<b>NuSym23: XIth International Symposium on Nuclear Symmetry Energy</b> <i>GSI Helmholtz Centre for Heavy-Ion Research, Darmstadt, Germany</i> "The equation of state of symmetric nuclear matter from heavy-ion collisions"	2023/09
FRIB Theory Alliance Topical Program: Theoretical Justifications and Motivations Profile FRIB Experiments Facility for Rare Isotope Beams, East Lansing, MI "The equation of state of dense nuclear matter from heavy-ion collisions"	for Early High- 2023/05
<b>STAR Collaboration meeting</b> <i>Lawrence Berkeley National Laboratory, Berkeley, CA</i> "Modeling physics at high baryon density with hadronic transport"	2023/03
<b>2022 Fall Meeting of the APS Division of Nuclear Physics</b> <i>New Orleans, LA</i> Dissertation Award Talk: "The equation of state of dense nuclear matter from heavy-ion co	2022/10 Illisions"
<b>WPCF 2022: 15th Workshop on Particle Correlation and Femtoscopy</b> <i>Facility for Rare Isotope Beams, East Lansing, MI</i> "Finite number and finite size effects on fluctuations in hadronic transport"	2022/07
<b>1st Workshop on Physics at High Baryon Density</b> <i>Los Angeles, CA</i> "Baryon fluctuations and the speed of sound at high baryon density"	2022/03
2020 RHIC & AGS Annual Users' Meeting (virtual) "Mapping out the QCD phase diagram"	2020/10
CONTRIBUTED TALKS	
<b>2024 Fall Meeting of the APS Division of Nuclear Physics</b> <i>Boston, MA</i> "Finite Size Scaling Analysis of Proton Cumulants"	2024/10
<b>INT workshop: Heavy Ion Physics in the EIC Era</b> <i>Seattle, WA</i> "Transport simulations for extracting the properties of dense nuclear matter"	2024/07
<b>CPOD 2024 (15th Workshop on Critical Point and Onset of Deconfinement)</b> <i>Berkeley, CA</i> "Finite Size Scaling Analysis of Proton Cumulants"	2024/05

<b>INT workshop: Chirality and Criticality: Novel Phenomena in Heavy-Ion Collisions</b> Seattle, WA	2023/08
"Constraints on the dense nuclear matter EOS from Au+Au collisions in the BES FXT range"	
APS April Meeting 2022 Minneapolis, MN	2023/04
"The equation of state of dense nuclear matter from heavy-ion collisions"	
<b>INT program: Intersection of nuclear structure and high-energy nuclear collisions</b> Seattle, WA	2023/01
"Dense Nuclear Matter Equation of State from Heavy-Ion Collisions"	
INT workshop: Dense Nuclear Matter Equation of State from Heavy-Ion Collisions Seattle, WA "Resources for diversifying nuclear physics"	2022/12
CPOD 2022: International Conference on Critical Point and Onset of Deconfinement	2022/11
<i>(virtual)</i> "Dynamical evolution of particle number fluctuations in hadronic transport"	
<ul> <li>2022 Fall Meeting of the APS Division of Nuclear Physics</li> <li>New Orleans, LA</li> <li>"Dynamical evolution of particle number fluctuations in hadronic transport"</li> </ul>	2022/10
Quark Matter 2022: 29th International Conference on Ultra-relativistic Nucleus-Nucleus Collisions Kraków, Poland "Measuring the speed of sound using cumulants of baryon number"	2022/04
APS April Meeting 2021	2021/04
"Cumulants: It's not what you think"	
<b>CPOD 2021: International Conference on Critical Point and Onset of Deconfinement</b> (virtual) "Cumulanta: It's more than you think"	2021/03
	/
<i>(virtual)</i> "Critical behavior in mean-field hadronic transport"	2020/10
Quark Matter 2019: 28th International Conference on Ultra-relativistic Nucleus-Nucleus Collisions Wuhan, China	2019/11
"Phase transitions and transport in dense nuclear matter from relativistic density functionals" (po	oster)
<ul><li>2019 Fall Meeting of the APS Division of Nuclear Physics</li><li>Arlington, VA</li><li>"Phase transitions and transport in dense nuclear matter from relativistic density functionals"</li></ul>	2019/10

<b>31st Max Born Symposium &amp; HIC for FAIR Workshop</b> Wrocław, Poland	2013/06
"Generalized Beth-Uhlenbeck approach to mesons in quark matter" (poster)	
Mini-Symposium: Dynamics of Correlations in Dense Hadronic Matter Wrocław, Poland	2012/12
"Pion dissociation: A primer for Mott effect and Levinson's theorem in hot quark matter	α.
9th Polish Workshop on Relativistic Heavy-Ion Collisions Kraków, Poland	2012/11
"I hermodynamics of pion dissociation in PNJL hot quark matter"	
COLLOQUIA	
Physics Colloquium	2023/10
Physics Department, Kent State University, Kent, OH	
"Understanding QCD matter under extreme conditions with transport models"	
SEMINARS	
<b>Nuclear Physics Seminar</b> Department of Physics, Ohio State University, Columbus, OH	2023/10
"Using flow observables from RHIC Beam Energy Scan II to constrain the dense nuclear r state"	natter equation of
FRIB Theory Seminar	2023/04
<i>Facility for Rare Isotope Beams, Michigan State University, East Lansing, MI</i> "The equation of state of dense nuclear matter from heavy-ion collisions"	
Nuclear Physics Seminar	2023/04
<i>Physics Department, University of Illinois Urbana-Champaign, Champaign, IL</i> "The equation of state of dense nuclear matter from heavy-ion collisions"	
<b>RHIC-BES: Online seminar series on RHIC Beam Energy Scan</b> ( <i>virtual</i> )	2023/03
"Dense nuclear matter equation of state from heavy-ion collisions"	
Hadron-Ion Tea seminar	2023/03
<i>Nuclear Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA</i> "The equation of state of dense nuclear matter from heavy-ion collisions"	
Theory Seminar	2022/12
<i>Theory Center, Institute for Nuclear Physics, Technische Universität Darmstadt (virtual)</i> "The speed of sound of dense nuclear matter from heavy-ion collisions"	
Seminar in Hadronic Physics	2022/12
Department of Physics, McGill University (virtual)	
"I he equation of state of dense nuclear matter from heavy-ion collisions"	

Particle, Astro, and Nuclear Seminar Physics & Astronomy Department, Wayne State University (virtual) "The equation of state of dense nuclear matter from heavy-ion collisions"	2022/12
Nuclear Theory Seminar2School of Physics and Astronomy, University of Minnesota, Minneapolis, MN2"The speed of sound in heavy-ion collisions"2	2022/05
Institute for Theoretical Physics Seminar2Department of Physics and Astronomy, University of Wrocław, Wrocław, Poland2"Measuring the speed of sound in matter created in heavy-ion collisions"2	.022/04
S@INT Seminar Institute for Nuclear Theory, University of Washington, Seattle, WA "Measuring the speed of sound in matter created in heavy-ion collisions"	.022/02
Particle, Astro, and Nuclear Seminar Physics ピ Astronomy Department, Wayne State University (virtual) "Mean-field equations of state in hadronic transport and beyond"	2021/05
Triangle Nuclear Theory Colloquium         Duke University & University of North Carolina at Chapel Hill & North Carolina State University         virtual)         "Mapping out the phase diagram of QCD in hadronic transport"	2021/01 y (joint,
Seminar in Hadronic Physics       2         Department of Physics, McGill University (virtual)       2         "Mapping out the phase diagram of QCD in hadronic transport"       2	2020/12
Nuclear Physics Seminar Physics & Astronomy Department, University of California, Los Angeles & Nuclear Science Division, La Berkeley National Laboratory (joint, virtual) "Mapping out the phase diagram of QCD in hadronic transport"	2020/12 <i>awrence</i>
Nuclear Physics Journal Club Department of Physics, University of Illinois Urbana-Champaign & Department of Physics, Univer- Houston (joint, virtual) "Critical behavior in mean field bedravie transmerr"	020/06 ersity of

"Critical behavior in mean-field hadronic transport"