CHRISTINE A. AIDALA
Curriculum vitae as of October 2023

Physics Department, University of Michigan
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Research interests: High-energy experimental nuclear physics; nucleon structure; hadronization; parton dynamics in QCD; QED/QCD analogs; foundations of physics.

EDUCATION:
Columbia University Ph.D. program, Physics, 2002-05. M.A. 2004. M.Phil. 2005. Ph.D. 2005.
University of Chicago Ph.D. program, Physics, 1999-2000. Medical leave starting March 2000.
Yale University 1995-99. B.S. in Physics, B.S. in Music 1999.

RESEARCH POSITIONS HELD:
September 2020-present. **Professor of Physics, University of Michigan**.

March-June 2020. **Visiting Professor, Short-Term, University of Milan, Italy**.

September-November 2019. **Fulbright U.S. Scholar, University of Pavia, Italy**.

September 2016-August 2020. **Associate Professor of Physics, University of Michigan**.

September 2012-August 2016. **Assistant Professor of Physics, University of Michigan**.

January-July 2012. **Scientist 2, Los Alamos National Laboratory**.

January 2009-December 2011. **Frederick Reines Distinguished Postdoctoral Fellow, Los Alamos National Laboratory**, PHENIX and E906/SeaQuest.

January 2006-December 2008. **Postdoctoral Research Associate, UMass Amherst**, PHENIX.

September 2002-December 2005. **Graduate Research Assistant, Columbia University**, PHENIX. Thesis advisor: B.A. Cole.

September 2001-August 2002. **Physics Associate, Brookhaven National Laboratory**, PHENIX.

RESEARCH FUNDING:
External funding:

John Templeton Foundation. *Why classical probability and classical information theory are incompatible with quantum mechanics and quantum contextuality*, Sep 1, 2023-Aug 31, 2026. Project Lead (PI).

National Science Foundation. *Studying quantum chromodynamics at LHCb*, Jul 1, 2020-Jun 30, 2026. Sole PI.

Department of Energy Office of Nuclear Physics. *Partonic transverse momentum effects in PHENIX and beyond*, Apr 15, 2015-Apr 14, 2024. Sole PI.

National Science Foundation. *AccelNet-Design: Inter-American Network of Networks on Quantum Chromodynamics Challenges*, Sep 1, 2021-Aug 31, 2024. Co-PI.

American Physical Society Women in Physics Group Grant. *Creating an Advocacy Lending Library for the University of Michigan Physics Department.* Mar 2023-Oct 2023. Co-PI.

Department of Energy subcontract through Brookhaven National Lab. *Silicon photomultiplier testing for sPHENIX.* Mar 2019-Mar 2020. Sole PI.

National Science Foundation. *CAREER: Valence and Sea Quark Dynamics at Fermilab*, July 1, 2015-June 30, 2021. Change of scope authorization for work on LHCb at CERN, Oct 2017. Sole PI.

2015 Sloan Research Fellowship. Sole PI.

Internal U. of Michigan funding:
MCubed Program. *From physical assumptions to thermodynamics and statistical mechanics.* Nov 2018-May 2021. In collaboration with David J. Baker (Philosophy), Gabriele Carcassi (Physics), Kai Sun (Physics).

Associate Professor Support Fund. *Studying proton structure and quantum chromodynamics at the LHCb experiment.* Jul 2018-Jun 2020. Sole PI.

MCubed Program. *From physical principles to Hamiltonian and Lagrangian dynamics.* Nov 2015-Apr 2018. In collaboration with David J. Baker (Philosophy), Lydia Bieri (Mathematics), Gabriele Carcassi (Physics).

2015 Michigan Memorial Phoenix Project. *Development of a prototype liquefied noble gas detector to measure 200 keV to 10 MeV neutrons.* Sole PI.

2014 Elizabeth Caroline Crosby Faculty Grant. Sole PI.

2013 Transforming Learning for Third Century QuickWins. *Student experiments in biomedical physics: A journey to inner space.* Co-PI with Fred Becchetti, Thomas Schwarz, and Ramon Torres-Isea.

AWARDS AND RECOGNITION:
Nominee, U. of Michigan Advising Council Outstanding Advisor Award, for graduate and undergraduate research advising, 2021-22.

U. of Michigan John Dewey Award, for long-term commitment to the education of undergraduate students, 2020.

Presidential Early Career Award for Scientists and Engineers (PECASE) from President Donald Trump, 2015 nominee through the National Science Foundation, 2019.

Fulbright U.S. Scholar Award 2019-20, to perform research at U. of Pavia, Italy.

Nominee, Alexander M. Cruickshank Award, Board of Trustees, Gordon Research Conferences, 2019, 2014.

U. of Michigan Imes and Moore Mentorship Award, for exceptional contributions toward recruiting and mentoring graduate students in the sciences from disadvantaged and non-traditional backgrounds, 2019.

Nominee, U. of Michigan Golden Apple Teaching Award, selected by consideration of student nominations from across the entire university, 2019.

Kavli Fellow, 2016.

Sloan Research Fellowship, 2015.

National Science Foundation CAREER Award, 2015.

Willie Hobbs Moore: Aspire, Advance, Achieve Award, for outstanding service as a mentor to the U-M Society of Women in Physics, University of Michigan, 2014.

Essayist for *Blazing the Trail: Essays by Leading Women in Science*. E. Ideal and R. Meharchand, eds. CreateSpace Independent Publishing, 2013.

Distinguished Women Physicists Lecture Series colloquium speaker, U. of Connecticut, 2012.

Invited Fellow, 50th anniversary celebration of the International School on Subnuclear Physics, Erice, Italy, June–July 2011. Organized by G. 't Hooft and A. Zichichi.

Sambamurti Memorial Lectureship, BNL, 2008. *"For her contributions to the RHIC Spin Program, notably her leadership in the measurement of the transverse spin structure of the proton using pions."*

Vernon Hughes Travel Fellowship, 2004.

Luise Meyer-Schutzmeister Award, Association for Women in Science, 2004.

GAANN Fellowship, U.S. Department of Education, through University of Chicago, 1999.

Scholarship Recipient, Long Island Chapter of the **American Nuclear Society**, 1999.

Nominee for **Barry M. Goldwater Scholarship**, Yale University, 1998.

TEACHING AND MENTORSHIP EXPERIENCE:
Teaching at U. of Michigan:
Physics 457: **Particle Physics and Cosmology**, Winter 2022.
Physics 406: **Thermal and Statistical Physics**, F2020, W2021, F2021, F2022, F2023.
Physics 288/489: **The Physics of Music**, Winter 2015, Winter 2016, Winter 2017, Winter 2019.
Physics 391: **Introduction to Modern Physics Laboratory**, Winter 2018.
Physics 401: **Intermediate Mechanics**, Fall 2016, Fall 2017, Fall 2018.
Physics 405: **Intermediate Electricity and Magnetism**, Fall 2014, Fall 2015.
Physics 351: **Mathematical Methods of Theoretical Physics I**, Fall 2012, Winter 2013, Fall 2013.

The Physics of Music, U. of Milan, Italy Mar 2020. 10-hour course for Physics Master's students.

Lecturer, U. of Milan, Italy, *QCD and Baryon Polarization.* Six hours of lectures aimed at doctoral students in theoretical and experimental high-energy physics.

Lecturer, U. of Muenster "Strong and Weak Interactions" Research Training Group Retreat, *Nucleon Structure and the Electron-Ion Collider*, Koerbecke, Germany, Sep 2018. Three hours of lectures aimed at graduate students in theoretical and experimental nuclear, particle, and astroparticle physics.

Lecturer, 26th International Conf. on Ultrarelativistic Heavy Ion Collisions (Quark Matter) Student Day, *The Electron-Ion Collider: A New Tool for Studying QCD.* Chicago, IL, Feb 2017.

Lecturer, 31st Hampton University Graduate Studies (HUGS) Program at Jefferson Lab, *Transverse-Momentum-Dependent Parton Distributions and Color Entanglement.* Jefferson Lab, June 2016. Six hours of lectures aimed at graduate students in hadronic physics.

Guest Lecturer, U. of Kansas, Graduate Nuclear Physics, March 2015.

Lecturer, European Graduate School on Complex Systems of Hadrons and Nuclei (HANUC), *The Structure of the Nucleon.* Turin, Italy, March 2009. Three hours of lectures aimed at graduate students in hadronic physics.

Teaching development activities:
Center for Research on Learning and Teaching Seminar - You Don't Belong Here: The Stories our Systems Tell (and Why We Have to Disrupt Them) - Oct 2021.
Center for Research on Learning and Teaching Seminar - Designing and Facilitating Group Work in Blended/Online Courses – Oct 2020.
National Center for Faculty Development & Diversity Webinar – Developing Anti-Oppressive Communities: Supporting Black Students and Mentees – Aug 2020.
Center for Research on Learning and Teaching Workshop, CUTS: Responding to Student Climate Concerns, Feb 2019.
University Musical Society Mellon Faculty Institute on Arts Academic Integration, 2015–2017.
Inclusive Teaching at Michigan Series: Leveraging Group Work and Teams in STEM Courses to Enhance Student Learning, May 2016.
Inclusive Teaching at Michigan Series: A Thousand Cuts: Responding to Student Climate Concerns, May 2016.
American Association of Physics Teachers New Faculty Workshop, Jun 2015.
Provost's Seminar on Teaching: Flipping the Classroom, May 2013.

U. of Michigan LSA Teaching Academy, Aug 2012.

Postdoctoral supervisees:

- Sookhyun Lee, 2019-22
- Joseph D. Osborn, 2018-19
- Michael Skoby, 2016-18
- Vincent Andrieux, 2015
- Vera R. Loggins, 2014-15
- Joshua G. Rubin, 2012-15

Student advising and thesis committee membership:

- Ph.D. advisor, Manuel Ramírez García, May 2023-present
- Ph.D. advisor, Ibrahim Chahrour, Jan 2022-present
- Ph.D. advisor, Devon A. Loomis, Sep 2021-present
- Ph.D. advisor, Cynthia Nuñez, May 2019-present
- Ph.D. advisor, Desmond M. Shangase, May 2019-present
- Ph.D. advisor, Dillon S. Fitzgerald, May 2019-present
- Ph.D. co-advisor, Jenia Rousseva (Applied and Interdisc. Mathematics), Oct 2019-Jul 2022
- Ph.D. advisor, Kara R. Mattioli, Feb 2018-Apr 2022
- Ph.D. advisor, Jordan D. Roth, Jan 2018-Dec 2021 (deceased)
- Ph.D. advisor, Nicole A. Lewis, May 2016-Aug 2020
- Ph.D. advisor, Catherine Ayuso, Jan 2015-Apr 2020
- Ph.D. advisor, Joseph D. Osborn, May 2014-Jun 2018
- Ph.D. advisor, Bryan J. Ramson, May 2013-Dec 2017
- Ph.D. co-advisor, Michael Febbraro, May 2013-Aug 2014
- Master's advisor, Enrique A. Gamez, Jan 2018-Aug 2019
- Master's advisor, William M. Dean, May 2017-Aug 2018
- Undergraduate research advisor for (* indicates honors/senior thesis student) Cheng Chiu, Sasha Bacon, Xiaolin (Lynn) Rong, José M. Arias, Abigail Feyrer*, Evan W. Croft, Ryan Cosper*, Joseph M. Ryan*, Christopher Platte, Jacob Repucci, Varshney Rangan, Julia Marchese, Nicole Kuchta, Al Kucich, Liam Blanchard, Luc Le Pottier*, Yuxi Xie, Anna Cooleybeck, Nathan Monahan, Micah Johnson*, Waleed El Rawi, Nikhil Shankar, Erik Loyd, Hayden Hansen, Yanyu (Jessen) Jia, Ruby Araj, Nicholas W. Kamp, Emily C. Camras, Ezra D. Lesser*, R. Tyler Read, Isaac Mooney, McKenzie Barber, Robert Cernak, Matthew Wood, Emily Cizmas, Aaron S. White*, Catherine M. Culkin, U. of Michigan; MJ Khan, Yijin (Jessie) Guo, Jem Guhit, Ashley Cavanagh, Puyang Ma, Mt. Holyoke College; Athira K V, IISER Pune, India; Meghan E. Tanner, Lock Haven U.

- Research advisor for high school students Benjamin Kovacs, Swapnil Akunuri, Shantanu Deshmukh
- Dissertation committee - N. Wuerfel, P. Arvind Atmasiddha, S. Zhang, C. Hendrus, C.R. Barnes, R. Fitzpatrick, A.S. White, A. Tewsley-Booth, D. Morton, S. Su, H. Liu, W. Guo, H.C. Cheng, M. Bales (Physics); M. Scott (Applied Physics); M.J. Greenfield (Math); D. Shy, M. Monterial, M. Paff, A. Trahan (Nuclear Engineering); S. Yu (Organ Performance); J. Ren, J. Cho, J.H. Gwak (Piano Performance), U. of Michigan; I. Mooney, J. Pan, Wayne State U.; T. Engelmore, Columbia U.
- Prospectus committee - C. Jansohn, B. Bogart, C. Little, M. Yuan, L. Barrowes, J. Guhit, L. Simpson, N. Wuerfel, R. Fitzpatrick, C.R. Barnes, C. Hendrus, D. Morton, A. Tewsley-Booth, S. Su, Z. Qu (Physics), O. Searfus, K. Beyer, N. Giha, D. Shy (Nuclear Engineering), L. Yourston (Biophysics), U. of Michigan; G. Kaur, Wayne State U.
- Sponsor for D. Manna as a Visiting Scholar, 2016-present
- Sponsor for T. Bhattacharyya as a Visiting Scholar, U. of Cape Town, Feb-Apr 2018
- Sponsor for R.J. Belmont, Vanderbilt U., as a Visiting Scholar at U. of Michigan to complete thesis, 2012
- Supervision of A. Datta, UMass Amherst, throughout thesis analyses, Sep 2007-Feb 2012
- Supervision of R. Han, Peking U., in completion of thesis analysis, May-Dec 2007

EDUCATIONAL AND PUBLIC OUTREACH PRESENTATIONS:
Public lecture: Advanced Studies Gateway talk, Facility for Rare Isotope Beams at Michigan State University, Dec 2023. *Seven Misconceptions in the Foundations of Physics.*

Public lecture: U. of Michigan Saturday Morning Physics series, Oct 2021. *The Physics of Music.* `https://youtu.be/7Fpf_3YK02k`.

Scientific Sense podcast guest, May 25, 2021. Gill Eapen, host. Discussed quantum chromodynamics and the presence of antimatter within the proton. `https://anchor.fm/scientificsense/episodes/Prof--Christine-Aidala--Professor-of-Physics-at-the-University-of-Michigan-evu4sd`

STEMTober Natural Sciences talk, Oct 2020. One-hour live online presentation for middle and high school students, organized by STEM Enrichment Youth. *Peering Into the Proton.*
`https://youtu.be/hdqMu9TAOmg`.

STEM World Convention talk, Aug 2020. Half-hour live online presentation for middle and high school students, organized by STEM Enrichment Youth. *Peering Into the Proton.*
`https://youtu.be/qOFUBYdq_pI`.

Yale Reunions public talk, May 2019. *Smashing Protons for a Living.*
`https://youtu.be/UrsyOzerbGY`

Public lecture: U. of Michigan Saturday Morning Physics series, Feb 2017. *The Antiups and Antidowns of Life: Studying Antiquarks in Hydrogen and Carbon.* `https://youtu.be/52xl0-8MPoM`

Public lecture: U. of Michigan Saturday Morning Physics series, Mar 2013. *Peering Into the Proton.* https://www.youtube.com/watch?v=iLNches_G6M

INVITED CONFERENCE AND WORKSHOP PRESENTATIONS:
Seminars and colloquia listed separately below.
For a complete listing of all presentations, please see http://www-personal.umich.edu/~caidala/index.html.

25th International Symposium on Spin Physics (SPIN2023), Duke U., Sep 2023. *Jets in spin physics - Experiment.* (Plenary)

Inaugural Conference for the Illinois Center for Advanced Studies of the Universe, U. of Illinois Urbana-Champaign, May 2022. *How experimental requirements shape the mathematics of the laws of physics.*

Simons Center Workshop - Flowing into the Future: Particle Jets in Quantum Field Theory and Phenomenology, Stony Brook U., Mar 2022. *Studying parton showers and hadronization in jets at LHCb.*

Institute for Nuclear Theory Workshop on Fragmentation Functions, online (U. of Washington), Nov 2021. *Hadron-in-jet fragmentation functions: Experimental review.*

14th Conference on Electromagnetic Interactions with Nucleons and Nuclei, online (Paphos, Cyprus), Nov 2021. *Experimental Review of Nucleon Spin Measurements.*

Sardinian Workshop on Spin, hybrid (Cagliari, Italy), Sep 2021. *TMD Studies at the LHC: Overview of results.*

20th Zimanyi School Winter Workshop, online (Budapest, Hungary), Dec 2020. *The Electron-Ion Collider: A new tool for studying QCD.*

Jets for 3D Imaging at the Electron-Ion Collider Workshop, online (Berkeley, CA), Nov 2020. *Jets as jackknives: The hadronization tool.*

Workshop on Correlations in Partonic and Hadronic Interactions, CERN, Feb 2020. *Advancing hadronization: From inclusive production to multiparticle correlations.*

QCD with EIC, IIT Bombay, India, Jan 2020. *Setting the stage for hadronization studies at the Electron-Ion Collider.*

19th Zimanyi School Winter Workshop, Budapest, Hungary, Dec 2019. *The Electron-Ion Collider: A new tool for studying QCD.*

Workshop on Resummation, Evolution, Factorization (REF2019), Pavia, Italy, Nov 2019. *The Electron-Ion Collider: A facility to bring the era of quantitative QCD to maturity.*

Santa Fe Jets and Heavy Flavor Workshop, UCLA, Jan 2019. *New Heavy Flavor Results in*

Heavy Ion Collisions from LHCb.

Inaugural Symposium of the Center for Frontiers in Nuclear Science, Stony Brook U., Nov 2018. *EIC User Group and the Findings of the National Academy of Science Review of the EIC.*

Probing Nucleons and Nuclei in High-Energy Collisions, Institute for Nuclear Theory, U. of Washington, Oct 2018. *Searching for TMD-factorization breaking in $p + p$ and p+A collisions:Color interactions in QCD.*

Electron-Ion Collider User Group Meeting, Catholic U. of America, Jul 2018. *Studying the Nucleon Sea at the EIC.*

Society of Physics Students Zone 7 Meeting, U. of Michigan, Jan 2018. *Probing the Proton: Entangled Personal and Particle Paths.*

12th Conference on Electromagnetic Interactions with Nucleons and Nuclei, Paphos, Cyprus, Oct-Nov 2017. *Status and Plans for the Electron-Ion Collider.* (Plenary)

APS Division of Nuclear Physics Fall Meeting, Pittsburgh, PA, Oct 2017. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.* (Plenary)

Kavli Frontiers of Science Symposium, National Academy of Sciences, Irvine, CA, Oct 2016. *Peering Into the Proton: Proton Substructure and Internal Dynamics.*

Gordon Conference on Photonuclear Reactions, Holderness, NH, Aug 2016. *SeaQuest: Probing Protons and Nuclei with Dileptons.*

APS Conference for Undergraduate Women in Physics, Newport News, VA, Jan 2016. *Probing the Proton: Entangled Personal and Particle Paths.*

ECT* Workshop: From 1-D Fragmentation to 3-D Correlated Fragmentation, Trento, Italy, October 2015. *The Future of Hadronization: Thoughts from an Experimentalist.*

APS Division of Particles and Fields Meeting, Ann Arbor, MI, August 2015. *Advancing the Era of Quantitative QCD: Experiment.* (Plenary)

Conference on the Intersections of Particle and Nuclear Physics, Vail, CO, May 2015. *The Relativistic Heavy Ion Collider and Large Hadron Collider: Pushing Forward the Era of Quantitative QCD.* (Plenary)

International Workshop on Structure and Spectroscopy, Suzdal, Russia, May 2015. *Recent Results and Future Plans for Studying Proton Structure at Fermilab.*

APS Conference for Undergraduate Women in Physics, Ann Arbor, MI, Jan 2015. *Probing the Proton: Entangled Personal and Particle Paths.*

4th International Workshop on Nucleon Structure at Large Bjorken-x, Frascati, Italy, November 2014. *Nucleon Structure Physics at the Relativistic Heavy Ion Collider.*

APS Division of Nuclear Physics Fall Meeting, Waikoloa, HI, October 2014. *Accelerator Studies for Polarized Protons at the Fermilab Main Injector.*

Gordon Conference on Photonuclear Reactions, Holderness, NH, August 2014. *Parton Correlations In and Across Nucleons.*

4th International Workshop on Transverse Polarization Phenomena in Hard Processes (Transversity 2014), Chia, Italy, June 2014. *Transversity 2014 Closing Remarks: Moving Forward in the Era of Quantitative QCD.* (Workshop closing talk)

APS Division of Nuclear Physics Fall Meeting, RHIC Users Forum, Newport News, VA, October 2013. *Advancing QCD at RHIC by Studying the Partonic Bound States of Everyday Matter.*

APS Division of Nuclear Physics Fall Meeting, Newport Beach, CA, October 2012. *Entering the Electronic Age at RHIC: eRHIC.*

APS Division of Nuclear Physics Fall Meeting, East Lansing, MI, October 2011. *The Electron-Ion Collider: Tackling QCD from the Inside (of Nucleons and Nuclei) Out.*

Quarks, Hadrons, and LHC, Mumbai, India, August 2011. *Transverse-Momentum-Dependent Distributions and Transverse Spin Phenomena at RHIC.*

Gluons and the Quark Sea at High Energies: Workshop to develop the physics case of a high-energy Electron-Ion Collider, INT, U. of Washington, September-November 2010. *Probing QCD in Hadrons Through Transverse-Momentum-Dependent Distributions at RHIC–Or–Why Use Messy p+p Collisions to Study What's Happening Inside the Nucleon?*

Electromagnetic Interactions with Nucleons and Nuclei (EINN 2009) Workshop on Partonic Transverse Momentum Distributions, Milos, Greece, September-October 2009. *Single-Spin Asymmetries and Transverse-Momentum-Dependent Distributions at RHIC.*

18th International Symposium on Spin Physics (SPIN2008), Charlottesville, VA, October 2008. *Spin in Hadron Reactions.* (Plenary)

Gordon Conference on Photonuclear Reactions, Tilton, NH, August 2008. *Transverse Spin Physics at RHIC.*

2nd International Workshop on Transverse Polarization Phenomena in Hard Processes (Transversity 2008), Ferrara, Italy, May 2008. *Transversity and Transverse-Momentum-Dependent Distribution Measurements from PHENIX and BRAHMS.*

24th Winter Workshop on Nuclear Dynamics, South Padre Island, TX, April 2008. *Peering into Hadronic Matter: The Electron-Ion Collider.*

International Workshop on Structure and Spectroscopy, Freiburg, Germany, March 2007. *Recent Spin Physics Results from RHIC.*

Spin Structure of the Nucleon Workshop, Nashville, TN, October 2006. *Recent Spin Physics Results from PHENIX.*

International Workshop on Transversity: New Developments in Nucleon Spin Structure, ECT*, Trento, Italy, June 2004. *Single Transverse Spin Asymmetries at RHIC.*

SEMINARS AND COLLOQUIA:

Physics Grad Student Symposium opening seminar by faculty, U. of Michigan, Jun 2023. *The Assumptions of Physics project.*

LHCb "Tuesday Meeting" Invited Topical Presentation, May 2023. *The Assumptions of Physics project.*

Center for Frontiers in Nuclear Science Seminar: Stony Brook U., Apr 2023. *Studying Hadronization at LHCb.*

Nuclear Physics Seminar: UIUC, Mar 2023. *The Next Decade of Cold QCD at Hadronic Facilities: Setting the Stage for the Electron-Ion Collider.*

Colloquium: Indiana U., Oct 2022. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Colloquium: U. of Nebraska Lincoln, May 2022. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Nuclear Theory Seminar: U. of Maryland, Oct 2021. *Studying Hadronization at LHCb.*

Applied and Interdisciplinary Mathematics Student Seminar: U. of Michigan, Sep 2021. *Assumptions of Physics: Project Overview.*

Elementary Particle Physics Seminar: U. of Warwick, UK, May 2021. *The Hazy Sea of QCD.*

Applied Physics Seminar: U. of Michigan, Mar 2021. *From Hadrons to Hidden Assumptions.*

Colloquium: Mississippi State U., Jan 2021. *The Electron-Ion Collider: Tackling Quantum Chromodynamics from the Inside (of Protons and Nuclei) Out.*

Seminar: U. of Pavia, Italy, Feb 2020. *Studying Hadronization at LHCb.*

Colloquium: U. of Pavia, Italy, Jan 2020. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Colloquium: Karlsruhe Institute of Technology, Germany, Oct 2019. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Colloquium: U. of Michigan, Sep 2019. *From Hadrons to Hidden Assumptions: My Recent Work in Quantum Chromodynamics and Foundations of Physics.*

HEP Seminar: Argonne National Lab, Apr 2019. *Spin-Momentum Correlations, Aharonov-*

Bohm, and Color Entanglement in Quantum Chromodynamics.

Seminar: Fermilab Equity, Diversity, and Inclusion series, Feb 2019. *A Journey In (and Out) of Physics.*

Seminar: U. of Michigan, Feb 2019. *Uncovering the Assumptions of Physics.*

Seminar: Yale, Mar 2018. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

CENPA Seminar: U. of Washington, Feb 2018. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Colloquium: Michigan State U., Jan 2018. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Nuclear and Particle Physics Colloquium: MIT, Nov 2016. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Seminar: UCLA, Oct 2016. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Colloquium: U. of Michigan, Oct 2015. *Frontiers in Quantum Chromodynamics.*

Colloquia: U. of Kansas, William & Mary, Mar, Jan 2015. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Seminar: Jefferson Lab, Jan 2015. *Spin-Momentum Correlations, Aharonov-Bohm, and Color Entanglement in Quantum Chromodynamics.*

Seminar: Penn State U., Jan 2015. *Measuring Polarization Effects in Proton-Proton and Muon-Nucleon Scattering.*

Seminar: Southern Methodist U., Dec 2014. *Investigating Proton Structure at the Relativistic Heavy Ion Collider.*

Seminar: Ohio U., Jan 2014. *Investigating Proton Structure at the Relativistic Heavy Ion Collider.*

Colloquium: U. of Notre Dame, Jan 2014. *From Quarks and Gluons to the World Around Us: Advancing Quantum Chromodynamics by Probing Nucleon Structure.*

Seminar: "University of D0," Fermilab, Mar 2013. *Investigating Proton Structure at the Relativistic Heavy Ion Collider.*

Seminar: Wayne State U., Jan 2013. *Investigating Proton Structure at the Relativistic Heavy Ion Collider.*

Colloquium: Triangle Nuclear Theory series, Duke U., Feb 2012. *The Electron-Ion Collider: Tackling QCD from the Inside (of Nucleons and Nuclei) Out.*

Colloquium: UConn, Jan 2012. *From Quarks and Gluons to the World Around Us: Understanding Quantum Chromodynamics by Exploring Nucleon Structure.*

Seminars: Los Alamos National Lab, Rutgers U., Sep - Oct 2011. *The PHENIX Decadal Plan: Crafting the Future of the Relativistic Heavy Ion Collider.*

Seminar: Stony Brook U., Feb 2011. *From Quarks and Gluons to the World Around Us: Advancing into the Era of Quantitative QCD via Investigation of Nucleon Structure.*

Seminars: DESY-Hamburg, DESY-Zeuthen, Germany, Oct 2010. *Investigating the Spin Structure of the Proton at the Relativistic Heavy Ion Collider.*

Seminar: Istituto Nazionale di Fisica Nucleare (INFN), Ferrara, Italy, Jun 2010. *Investigating the Spin Structure of the Proton at RHIC: Recent Results.*

Colloquium, Catholic U. of America, Dec 2009. *Getting Protons to Study Themselves: Investigating Proton Structure at the Relativistic Heavy Ion Collider.*

Seminar: Los Alamos National Lab, Oct 2009. *The Electron-Ion Collider: Tackling QCD from the Inside (of Nucleons and Nuclei) Out.*

Seminar: Jefferson Lab, May 2009. *Investigating the Spin Structure of the Proton at RHIC.*

Seminars: Los Alamos National Lab, Columbia U., Jan - Feb 2009. *Frontiers in Nucleon Structure.*

Seminars: Michigan State U., U. of Kentucky, Kent State U., 2008. *The Emerging QCD Frontier: The Electron-Ion Collider.*

Seminar: INFN Torino, Italy, Jun 2008. *Recent Spin Physics Results from RHIC.*

Seminar: INFN Pavia, Italy, Jun 2008. *Recent Results from the PHENIX Experiment at RHIC.*

Colloquium: Old Dominion U., Sep 2007. *A Novel Shakedown of the Proton Spin Breakdown: How the Field Has Become Wider with a Polarized Proton Collider.*

Seminars: UMass Amherst, INFN Cagliari, Italy, 2006. *Recent Spin Physics Results from PHENIX.*

Seminar: Mt. Holyoke College, 2006. *The Whole Story Behind a Half: The Quest to Understand the Proton's Spin.*

Seminars: Indiana University Cyclotron Facility, Los Alamos National Lab, Lawrence Berkeley National Lab, 2005. *Studying the Transverse Spin Structure of the Proton at PHENIX.*

Seminars: CERN, Switzerland; Laboratori Nazionali di Frascati, Italy; INFN Torino, Italy; INFN Ferrara, Italy, 2004. *Recent Spin Results from PHENIX.*

Outreach seminars promoting physics graduate study: **Bryn Mawr, Mt. Holyoke, Smith, Vassar, Barnard, Wellesley, and Amherst Colleges**, 2003-04. Sponsored by Columbia University.

Colloquium: Vassar College, Dec 2003. *Flying High with PHENIX: Surveying the Landscape for Quark-Gluon Plasma and the Secrets of the Proton's Spin.*

NATIONAL AND PROFESSIONAL SOCIETY SERVICE AND EXPERIENCE:
U.S. Nuclear Science Advisory Committee, 2023-present. Members are special Government employees advising the Department of Energy and National Science Foundation.

Long-Range Plan Writing Committee, U.S. Nuclear Science Advisory Committee, 2022-present.

APS Division of Nuclear Physics Ally, 2021-present. The Allies program aims to help reduce harassment at DNP meetings and provides an avenue for those affected to have the issues addressed in a timely manner. Required 1.5 hrs virtual and 5 hrs in-person training.

Elected Member, Executive Committee of the American Physical Society (APS) Division of Nuclear Physics, 2021-23.

Nominating Committee, APS Division of Nuclear Physics, 2019-20.

U.S. National Academy of Sciences U.S.-Based Electron-Ion Collider Science Assessment Committee, 2016-18.

Program Committee, American Physical Soc. (APS) Division of Nuclear Physics, 2017-18.

M. Hildred Blewett Fellowship Selection Committee, APS, 2017.

Nominating Committee, APS Topical Group on Hadronic Physics, 2016.

Elected Member, Executive Committee of the APS Topical Group on Hadronic Physics, 2014-15.

Member, APS Topical Group on Hadronic Physics Dissertation Award Committee, 2014.

Elected member, National User Facility Organization (NUFO) Steering Committee, 2011-14. (Now the Society for Science at User Research Facilities (SSURF)).

CONFERENCE, WORKSHOP, AND SCHOOL ORGANIZATION:
Organizing Committee, 8th International Conference on the Initial Stages in High-Energy Nuclear Collisions, Taipei, Taiwan, 2025.

Local Organizing Committee, APS Conference for Undergraduate Women in Physics, Ann Arbor, MI, Jan 19-21, 2024.

International Advisory Committee, 11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions, Aschaffenburg, Germany, Mar 27-31, 2023.

International Advisory Committee, Transversity 2022, Pavia, Italy, May 23-27, 2022.

Co-organizer, Flowing into the Future: Particle Jets in Quantum Field Theory and Phenomenology, Simons Center for Geometry and Physics, Stony Brook, Mar 21-25, 2022.

Co-organizer, Center for Frontiers in Nuclear Science Workshop: RHIC Science Program Informative Toward EIC in the Coming Years, online, May 24-27, 2021.

International Advisory Committee, 6th International Conference on the Initial Stages in High-Energy Nuclear Collisions, online (Rehovot, Israel), Jan 10-15, 2021.

International Advisory Committee, Electron-Ion Collider User Group Meeting, online (Florida International U.), Jul 15-17, 2020.

International Advisory Committee, QCD at EIC, IIT Bombay, India, Jan 4-7, 2020.

International Advisory Committee, 5th International Conference on the Initial Stages in High-Energy Nuclear Collisions, Columbia U., Jun 24-28, 2019.

Program Committee, 23rd International Symposium on Spin Physics, Ferrara, Italy, Sep 10-14, 2018.

Scientific Advisory Committee, Electron-Ion Collider User Group Meeting, Catholic U. of America, Jul 30-Aug 2, 2018.

International Advisory Committee, 27th International Conf. on Ultrarelativistic Heavy Ion Collisions (Quark Matter), Venice, Italy, May 13-19, 2018.

Co-organizer, Institute for Nuclear Theory Workshop on The Flavor Structure of the Nucleon Sea, Seattle, WA, Oct 2-13, 2017.

Scientific Advisory Committee, Electron-Ion Collider User Group Meeting, Trieste, Italy, Jul 18-22, 2017.

International Advisory Committee, 26th International Conf. on Ultrarelativistic Heavy Ion Collisions (Quark Matter), Chicago, IL, Feb 5-11, 2017.

Local Program Committee, 22nd International Symposium on Spin Physics, Urbana-Champaign, IL, Sep 25-30, 2016.

Scientific Committee, Electron-Ion Collider User Group Meeting, Berkeley, CA, Jan 6-9, 2016.

Local Organizing Committee, APS Division of Particles and Fields Meeting, Ann Arbor, MI, Aug 3-7, 2015.

Organizing Committee, 2015 Workshop of the APS Topical Group on Hadronic Physics, Baltimore, MD, Apr 8-10, 2015.

Local Organizing Committee, APS Conference for Undergraduate Women in Physics, Ann Arbor, MI, Jan 16-18, 2015.

Chair, Workshop on Opportunities for Polarized Physics at Fermilab, May 20-22, 2013.

International Organizing Committee, 3rd Workshop on the QCD Structure of the Nucleon (QCD-N'12), Bilbao, Spain, Oct 22-26, 2012.

Program Committee, 19th Particles and Nuclei International Conference (PANIC 2011) and Co-organizer for session on Quarks and Gluons in Hadrons, MIT, Jul 24-29, 2011.

Co-organizer, Workshop on Transverse-Momentum-Dependent Distributions, ECT*, Trento, Italy, Jun 21-25, 2010.

Principal organizer, Symposium on Educational and Public Outreach, sponsored by the RHIC-AGS Users' Executive Comm. and the National User Facility Organization, BNL, Jun 9, 2010.

Co-convenor, Spin Physics Working Group, 18th International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2010), Florence, Italy, Apr 17-23, 2010.

Co-organizer, Workshop on Transverse Spin Physics, RHIC-AGS Users' Mtg, BNL, Jun 2009.

Principal organizer, 4th PHENIX Spinfest School on QCD Physics, BNL, Aug 2008.

Co-organizer, 2nd PHENIX Spinfest School on QCD Physics, BNL, Aug 2006.

Principal organizer, Workshop on the Helicity Structure of the Nucleon, RHIC-AGS Users' Meeting, BNL, Jun 2006.

Co-organizer, Workshop on Proton Spin Physics, RHIC-AGS Users' Meeting, BNL, Jun 2005.

COLLABORATION AND RESEARCH COMMUNITY SERVICE:
Journal article reviewer for Physical Review Letters, Physical Review C and D, Nature, European Physical Journal C, Physics Letters B, Nuclear Physics A and B, Nuclear Instruments and Methods A, Foundations of Physics.

Proposal and research reviewer for U.S. Department of Energy - Nuclear Physics and HEP, U.S. National Science Foundation, Royal Society (UK), National Science Centre (NCN, Poland), Ministry for Education, University, and Research (MIUR, Italy), National Agency for the Evaluation of Universities and Research Institutes (ANVUR, Italy), Natural Sciences and Engineering Research Council (Canada), Los Alamos National Lab.

U. of Michigan representative, ePIC Collaboration Council, 2022-present.

U. of Michigan representative, sPHENIX Institutional Board, August 2015-present.

U. of Michigan representative, PHENIX Institutional Board, November 2012-present.

Level-3 Manager, sPHENIX Calorimeter Electronics: Optical Sensors. Silicon photomultiplier quality assurance, 2016-present.

Academic Program Review Committee. U. of Nebraska, Lincoln Dept. of Physics and Astronomy, 2022.

Research Product Reviewer for Physical Sciences (Nuclear and Particle Physics), National Agency for the Evaluation of Universities and Research, Italy, 2021.

Elected Institutional Board Chair, Electron-Ion Collider User Group, Oct 2016-Feb 2021. Also ex-officio member of EIC User Group Steering Committee.

Member, BNL Associate Lab Director for Nuclear and Particle Physics Search Committee, Aug 2020-Jan 2021.

Co-convenor, sPHENIX Cold QCD Topical Group, Aug 2016-Dec 2020.

Member, LHCb Speakers' Bureau, Apr 2018-Jun 2020.

Member, sPHENIX Spokesperson Nomination and Election Committee, Fall 2018.

Member, Electron-Ion Collider User Group Charter Writing Committee, 2016.

Member, Relativistic Heavy Ion Collider Cold QCD Plan Writing Committee, 2015-16.

Member, sPHENIX Collaboration Bylaws Committee, 2015.

Member, PHENIX Collaboration Spokesperson Nominating Committee, 2015.

Elected member, PHENIX Executive Council, 2011-2016. The EC is responsible for establishing scientific priorities for the experiment, with members selected for their "scientific judgment, technical expertise, and commitment to the experiment."

Member, Relativistic Heavy Ion Collider Thesis Award Committee, 2014, 2011.

Elected member, RHIC-AGS Users' Executive Committee, June 2009-June 2012.

Moderator, Panel discussion: The Future of RHIC Upgrades, RHIC Users Open Forum Meeting, Meeting of the APS Division of Nuclear Physics, October 2011.

Member, PHENIX Decadal Plan Writing Committee, March-September 2010.

Member, PHENIX Speakers Bureau, April 2009-February 2010.

Member, PHENIX Forward Calorimeter Upgrade Internal Review Comm., Jan-Feb 2009.

Co-convenor, PHENIX Spin Physics Working Group, January 2007-April 2009. Oversaw and coordinated all analysis activities within Working Group; approved scientific results for public release by the collaboration.

Member, PHENIX Spokesperson Selection Task Force, May-July 2006.

Elected Student/Postdoc Representative, RHIC-AGS Users' Executive Comm., 2004-05.

SERVICE WITHIN THE UNIVERSITY OF MICHIGAN:
Chair, Promotion Review Panel, Prof. Thomas Schwarz, 2023-24.

College of Literature, Science, and Arts Executive Committee, 2022-23.

Faculty advisor, Community of Physicists for Inclusion and Equity (CoPhIE), formerly the Society for Women in Physics (SWIP), 2022-23, 2012-16.

Chair, Tenure Review Panel, Prof. Marcelle Soares-Santos, 2022-23.

Physics Dept. Hiring Committee, 2021-22.

Physics Dept. Colloquium Committee Chair, 2020-22.

Physics Dept. Graduate Mentor, 2020-22.

Third-Year Review Committee, Prof. Marcelle Soares-Santos, 2021-22.

ADVANCE Launch Committee Member, for Prof. Marcelle Soares-Santos, 2020-21.

ADVANCE Advisory Board for the College of Literature, Science, and Arts, 2017-2021.

Rackham Predoctoral Fellowship Selection Committee, 2019-21.

Packard Fellowship for Science & Engineering Reviewer, Office of Research, 2021.

Physics Dept. Graduate Admissions Committee, 2020-21.

Mentor for participants, NextProf Science Workshop, aimed at future faculty from diverse backgrounds, 2020, 2019, 2016.

Reviewer, Data Science for Music proposals, Michigan Institute for Data Science (MIDAS), 2018.

Senate Advisory Committee on University Affairs (SACUA) Nominating Comm., 2018.

Physics Dept. Executive Committee, 2017-19.

Faculty Senate Assembly, elected rep. for College of Literature, Science, and Arts, 2015-18.

Physics Dept. Diversity, Equity, and Inclusion Committee, 2016-18. **Co-Chair** 2017-18.

Physics Dept. Rackham Graduate School Diversity Ally, 2016-18.

Physics Dept. HEP/Astro/Nuclear Seminar organizer, 2012-17. **Chair** 2013-14, 2015-17.

Physics Dept. Graduate Admissions Committee, 2016-17.

Member, U. of Michigan Willie Hobbs Moore Award Selection Committee, 2015.

Member, Physics Dept. Undergrad Curriculum and Concerns Committee, 2012-15.

OTHER SERVICE AND EXPERIENCE:
Nuclear Physics Day on Capitol Hill, Apr 2022 (virtual), Apr 2021 (virtual), Apr 2018, May 2013. Met with staff members for Michigan Senators Levin (2013), Peters (2018, 2021, 2022) and Stabenow and Representative Dingell to discuss funding for nuclear physics research.

Electron-Ion Collider Capitol Hill visit, Dec 2018. Met with staff members from eight Congressional offices to inform them about the proposed Electron-Ion Collider.

Earned Value Management System training, Jun 2017. Two full days of training in using EVMS for scientific project management, Brookhaven National Lab.

Panelist, Panel discussion: Undergraduate research, APS Conference for Undergraduate Women in Physics, Wayne State University, Jan 2017.

Moderator, Panel discussion: Women In Physics Career Panel, APS Conference for Undergraduate Women in Physics, Ann Arbor, MI, Jan 2015.

Member, BNL Work-Life Balance Committee, April 2010-June 2012.

CHRISTINE A. AIDALA
PUBLICATION LIST AS OF OCTOBER 2023

BOOK:

1. ***Assumptions of Physics***. G. Carcassi, C.A. Aidala. Michigan Publishing, 2021, (2nd ed. 2023), ISBN 978-1-60785-706-7.

PAPERS SUBMITTED FOR PUBLICATION:

1. **The unphysicality of Hilbert spaces**. G. Carcassi, F. Calderón, C.A. Aidala. arXiv:2308.06669.
2. **On the reality of the quantum state once again: A no-go theorem for ψ-ontic models**. G. Carcassi, A. Oldofredi, C.A. Aidala. arXiv:2201.11842.

PUBLICATIONS IN PEER-REVIEWED JOURNALS:
Papers not associated with a project or on behalf of a full experimental collaboration:

1. **Ntuple Wizard: an application to access large-scale open data from LHCb**. C.A. Aidala, C. Burr, M. Cattaneo, D.S. Fitzgerald, A. Morris, S. Neubert, D. Tropmann. Comput. Soft. Big Sci. 7:6, 2023. *Led by Aidala group grad student Dillon S. Fitzgerald.*
2. **Precision studies of QCD in the low-energy domain of the EIC**, V.D. Burkert, L. Elouadrhiri, et al. Prog. Part. Nucl. Phys. 131:104032, 2023.
3. **ATHENA detector proposal: A Totally Hermetic Electron-Nucleus Apparatus proposed for IP6 at the Electron-Ion Collider**. J. Adam et al. (ATHENA Collaboration). J. Inst. 17:P10019, 2022.
4. **QCD factorization and quantum mechanics**. C.A. Aidala and T.C. Rogers. Phil. Trans. Roy. Soc. A380:20210058, 2021. (Invited submission)
5. **Design and beam test results for the 2D projected sPHENIX electromagnetic calorimeter prototype**. C.A. Aidala et al. IEEE Trans. Nucl. Sci. 68:173, 2021.
6. **Pion and kaon structure at the Electron-Ion Collider**. A.C. Aguilar et al. Eur. Phys. J. A55:190, 2019.
7. **Design and Beam Test Results for the sPHENIX Electromagnetic and Hadronic Calorimeter Prototypes**. C.A. Aidala et al. IEEE Trans. Nucl. Sci. 65:2901, 2018.
8. **Four-twist helix snake to maintain polarization in multi-GeV proton rings**. F. Antoulinakis et al. Phys. Rev. Accel. Beams, 20:091003, 2017.
9. **Limits on transverse-momentum-dependent evolution from semi-inclusive deep-inelastic scattering at moderate Q**. C.A. Aidala, B. Field, L.P. Gamberg, and T.C. Rogers. Phys. Rev. D89:094002, 2014.
10. **The PHENIX Forward Silicon Vertex Detector**. C. Aidala et al. Nucl. Instrum. Meth. A755:44, 2014.
11. **The spin structure of the nucleon**. C.A. Aidala, S.D. Bass, D. Hasch, and G.K. Mallot. Rev. Mod. Phys. 85:655, 2013. (Invited submission)

12. **Global analysis of fragmentation functions for eta mesons**. C.A. Aidala, F. Ellinghaus, R. Sassot, J.P. Seele, and M. Stratmann. Phys. Rev. D83:034002, 2011.

13. **Towards an understanding of nucleon spin structure: from hard to soft scales**. S.D. Bass and C.A. Aidala. Int. J. Mod. Phys. A21:4407-4424, 2006.

14. **A hadron-blind detector for PHENIX**. C. Aidala et al. Nucl. Instrum. Meth. A502:200-204, 2003.

Papers for the Assumptions of Physics project:
`https://assumptionsofphysics.org/`

1. **Geometric and physical interpretation of the action principle**. G. Carcassi and C.A. Aidala. Scientific Reports 13:12138, 2023.

2. **Hamiltonian privilege**. J. Hunt, G. Carcassi, C.A. Aidala. Erkenntnis 2023. (DOI 10.1007/s10670-023-00708-0)

3. **On the common logical structure of classical and quantum mechanics**. A. Oldofredi, G. Carcassi, C.A. Aidala. Erkenntnis 2022. (DOI 10.1007/s10670-022-00593-z)

4. **Reverse Physics: From Laws to Physical Assumptions**. G. Carcassi, C.A. Aidala. Foundations of Physics 52:40, 2022.

5. **Four postulates of quantum mechanics are three**. G. Carcassi, L. Maccone, C.A. Aidala. Phys. Rev. Lett. 126:110402, 2021.

6. **Variability as a better characterization of Shannon entropy**. G. Carcassi, C.A. Aidala, J. Barbour. European J. of Physics 42:045102, 2021.

7. **Hamiltonian mechanics is conservation of information entropy**. G. Carcassi, C.A. Aidala. Studies in the History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics 71:60, 2020.

8. **Space-time structure may be topological and not geometrical**. G. Carcassi, C.A. Aidala. Physica Scripta 95:084003, 2020.

9. **The fundamental connections between classical Hamiltonian mechanics, quantum mechanics and information entropy**. G. Carcassi, C.A. Aidala. Int. J. of Quantum Information 18:1941025, 2020.

10. **Topology and experimental distinguishability**. C.A. Aidala, G. Carcassi, M.J. Greenfield. Top. Proc. 54:271, 2019.

11. **From physical assumptions to classical and quantum Hamiltonian and Lagrangian particle mechanics**. G. Carcassi, C.A. Aidala, D.J. Baker, L. Bieri. J. Phys. Commun. 2:045026, 2018.

SeaQuest Collaboration papers:
In this moderately sized 17-institution collaboration, Aidala and her group played key roles in developing the Beam Cherenkov Counter as well as serving as the cryotarget experts from 2013-16. In addition, they contributed to the spectrometer construction, the development of hardware triggers, track reconstruction software, and more than 5,000 hours of operations support.

1. **Estimation of combinatoric background in SeaQuest using an event-mixing method**. S.F. Pate et al. (SeaQuest Collaboration). Accepted by J. Inst. arXiv:2302.04152

2. **Measurement of flavor asymmetry of light-quark sea in the proton with Drell-Yan dimuon production in $p+p$ and $p+d$ collisions at 120 GeV**. J. Dove et al. Phys. Rev. C108:035202, 2023.

3. **The asymmetry of antimatter in the proton**. J. Dove et al. Nature 590:561, 2021.

4. **The SeaQuest Spectrometer at Fermilab**. C.A. Aidala et al. Nucl. Instrum. Meth. A930:49-63, 2019.

LHCb Collaboration papers to which a significant contribution was made:
(Coauthor of 232 additional published LHCb papers)

1. **Measurement of the prompt D^0 nuclear modification factor in pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV**. LHCb Collaboration. Phys. Rev. Lett. 131:102301, 2023. *Review Committee Chair.*

2. **Multidifferential study of identified charged hadron distributions in Z-tagged jets in proton-proton collisions at $\sqrt{s} = 13$ TeV**. LHCb Collaboration. Phys. Rev. D108:L031103, 2023. *Work of Aidala group postdoc Sookhyun Lee.*

3. **First measurement of the $Z \to \mu^+\mu^-$ angular coefficients in the forward region of pp collisions at $\sqrt{s} = 13$ TeV**. R. Aaij et al. Phys. Rev. Lett. 129:091801, 2022. *Aidala was an analysis proponent involved in the low-p_T part of the analysis, where the A_2 coefficient is sensitive to the Boer-Mulders transverse-momentum-dependent PDF, and wrote the relevant sections of the paper.*

4. **Identification of charm jets at LHCb**. R. Aaij et al. J. Inst. 17:P02028, 2022. *Working Group reviewer.*

5. **Measurement of charged hadron production in Z-tagged jets in proton-proton collisions at $\sqrt{s} = 8$ TeV**. R. Aaij et al. Phys. Rev. Lett. 123:232001, 2019. *Work of Aidala group postdoc Joseph D. Osborn.*

PHENIX Collaboration papers to which a significant contribution was made:
(Coauthor of 184 additional published PHENIX papers)

1. **Transverse single-spin asymmetry of midrapidity π^0 and η mesons in p+Au and p+Al collisions at $\sqrt{s_{NN}} = 200$ GeV**. N.J. Abdulameer et al. Phys. Rev. D107:112004, 2023. *Work of Aidala group grad student Dillon S. Fitzgerald.*

2. **Improving constraints on gluon spin-momentum correlations in transversely polarized protons via midrapidity open-heavy-flavor electrons in $p^\uparrow + p$ collisions at $\sqrt{s} = 200$ GeV**. U.A. Acharya et al. (PHENIX Collaboration). Phys. Rev. D107:052012, 2023. *Work of Aidala group grad student Dillon S. Fitzgerald.*

3. **Transverse-single-spin asymmetries of charged pions at midrapidity in transversely polarized $p+p$ collisions at $\sqrt{s} = 200$ GeV**. U.A. Acharya et al. Phys. Rev. D105:032004, 2022. *Internal Review Committee Chair.*

4. **Transverse single spin asymmetries of forward neutrons in $p+p$, p+Al and p+Au collisions at $\sqrt{s_{NN}} = 200$ GeV as a function of transverse and longitudinal momenta**. U.A. Acharya et al. Phys. Rev. D105:032004, 2022. *Internal Review Committee Chair.*

5. **Probing gluon spin-momentum correlations in transversely polarized protons through midrapidity isolated direct photons in $p+p$ collisions at $\sqrt{s} = 200$ GeV**. U.A. Acharya et al. Phys. Rev. Lett. 127:162001, 2021. *Work of Aidala group grad student Nicole A. Lewis.*

6. **Transverse single-spin asymmetries of midrapidity π^0 and η mesons in $p+p$ collisions at $\sqrt{s} = 200$ GeV**. U.A. Acharya et al. Phys. Rev. D103:052009, 2021. *Work of Aidala group grad student Nicole A. Lewis.*

7. **Polarization and cross section of midrapidity J/ψ production in $p+p$ collisions at $\sqrt{s} = 510$ GeV**. U. Acharya et al. Phys. Rev. D102:072008, 2020. *Work co-led by Aidala group postdoc Sookhyun Lee.*

8. **Nonperturbative-transverse-momentum broadening in dihadron angular correlations in $\sqrt{s_{NN}} = 200$ GeV proton-nucleus collisions**. C. Aidala et al. Phys. Rev. C99:044912, 2019. *Work of Aidala group grad student Joseph D. Osborn.*

9. **Nonperturbative transverse-momentum-dependent effects in dihadron and direct photon-hadron angular correlations in $p+p$ collisions at $\sqrt{s} = 200$ GeV**. C. Aidala et al. Phys. Rev. D98:072004, 2018. *Work of Aidala group grad student Joseph D. Osborn.*

10. **Nonperturbative-transverse-momentum effects and evolution in dihadron and direct photon-hadron angular correlations in $p+p$ collisions at $\sqrt{s} = 510$ GeV.** A. Adare et al. Phys. Rev. D95:072002, 2017. *Work of Aidala group grad student Joseph D. Osborn.*

11. **Dielectron production in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV.** A. Adare et al. Phys. Rev. C93:014904, 2016.

12. **Inclusive cross sections, charge ratio and double-helicity asymmetries for π^+ and π^- production in $p+p$ collisions at $\sqrt{s} = 200$ GeV.** A. Adare et al. Phys. Rev. D91:032001, 2015.

13. **Cross section and transverse single-spin asymmetry of η mesons in $p^\uparrow + p$ collisions at $\sqrt{s} = 200$ GeV at forward rapidity.** A. Adare et al. Phys. Rev. D90:072008, 2014.

14. **Spectra and ratios of identified particles in Au+Au and d+Au collisions at $\sqrt{s_{NN}} =$ 200 GeV**. A. Adare et al. Phys. Rev. C88:024906, 2013.

15. **Cross sections and double-spin asymmetries of midrapidity inclusive charged hadron production in p+p collisions at $\sqrt{s} = 62.4$ GeV**. A. Adare et al. Phys. Rev. D86:092006, 2012.

16. **Cross section and double-helicity asymmetry in charged hadron production in p+p collisions at $\sqrt{s} = 62.4$ GeV at PHENIX**. C.A. Aidala for the PHENIX Collaboration. J. Phys. Conf. Ser. 295:012093, 2011.

17. **Measurement of neutral mesons in p+p collisions at $\sqrt{s} = 200$ GeV and scaling properties of hadron production**. A. Adare et al. Phys. Rev. D83:052004, 2011.

18. **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**. A. Adare et al. Phys. Rev. D83:032001, 2011.

19. **Measurement of transverse single-spin asymmetries for J/ψ production in polarized p+p collisions at $\sqrt{s} = 200$ GeV**. A. Adare et al. Phys. Rev. D82:112008, 2010. Err. Ibid. D86:099904, 2012.

20. **Transverse momentum dependence of η meson suppression in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV**. A. Adare et al. Phys. Rev. C82:011902 (R), 2010.

21. **Double helicity dependence of jet properties from dihadrons in longitudinally polarized p+p collisions at $\sqrt{s} = 200$ GeV**. A. Adare et al. Phys. Rev. D81:012002, 2010.

22. **High transverse momentum η meson production in p+p, d+Au and Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV**. S.S. Adler et al. Phys. Rev. C75:024909, 2007.

23. **Common suppression pattern of η and π^0 mesons at high transverse momentum in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV**. S.S. Adler et al. Phys. Rev. Lett. 96:202301, 2006.

24. **Single electrons from heavy flavor decays in p+p collisions at $\sqrt{s} = 200$ GeV**. S.S. Adler et al. Phys. Rev. Lett. 96:032001, 2006.

25. **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**. S.S. Adler et al. Phys. Rev. Lett. 95:202001, 2005.

26. **Mid-rapidity direct photon production in p+p collisions at $\sqrt{s_{NN}} = 200$ GeV**. S.S. Adler et al. Phys. Rev. D71:071102, 2005.

27. **Double helicity asymmetry in inclusive mid-rapidity π^0 production for polarized p+p collisions at $\sqrt{s} = 200$ GeV**. S.S. Adler et al. Phys. Rev. Lett. 93:202002, 2004.

28. **J/ψ production from proton-proton collisions at $\sqrt{s} = 200$ GeV**. S.S. Adler et al. Phys. Rev. Lett. 92:051802, 2004.

29. **Mid-rapidity neutral pion production in proton-proton collisions at $\sqrt{s} = 200$ GeV**. S.S. Adler et al. Phys. Rev. Lett. 91:241803, 2003.

CONFERENCE AND WORKSHOP PROCEEDINGS:

1. **Time-reversal odd effects in QCD and beyond**. D. Manna, A. Signori, C.A. Aidala, Proceedings of the 28th International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2021), online, April 2021. (Reviewed) SciPost Phys. Proc. 8:169, 2022.

2. **Searching for TMD-factorization breaking in p+p and p+A collisions: Color interactions in QCD** C.A. Aidala, Proceedings of INT Workshop INT-2018-3: Probing Nucleons and Nuclei in High Energy Collisions, October-November 2018. arXiv:1912.10724

3. **Moving Forward in the Era of Quantitative QCD: Transversity 2014 Closing Remarks** C.A. Aidala, Proceedings of the 4th International Workshop on Transverse Polarization Phenomena in Hard Processes (Transversity 2014), Chia, Italy, June 2014. EPJ Web Conf. 85:03001 (2015).

4. **Spin physics: Session summary**. C.A. Aidala, S. Liuti, C. Riedl, Proceedings of the 18th International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2010), Florence, Italy, April 2010. Proceedings of Science DIS2010:018, 2010. arXiv:1007.4563 [hep-ph]

5. **Spin in hadron reactions**. C.A. Aidala. Proceedings of the 18th International Symposium on Spin Physics (SPIN2008), Charlottesville, VA, October 2008. (Invited plenary talk) AIP Conf. Proc. 1149:124, 2009. arXiv:0903.2393 [hep-ex]

6. **Transversity and transverse-momentum-dependent distribution measurements from PHENIX and BRAHMS**. C. Aidala for the PHENIX and BRAHMS Collaborations. Proceedings of the 2nd International Workshop on Transverse Polarization Phenomena in Hard Processes (Transversity 2008), Ferrara, Italy, May 2008. (Invited talk) arXiv:0808.4139 [hep-ex]

7. **Peering into hadronic matter: The Electron-Ion Collider**. C.A. Aidala for the Electron-Ion Collider Collaboration. Proceedings of the 24th Winter Workshop on Nuclear Dynamics, South Padre Island, TX, Apr 2008. (Invited talk) arXiv:0806.4933 [nucl-ex]

8. **Transverse spin at PHENIX: Results and prospects**. C. Aidala for the PHENIX Collaboration. Proceedings of the International Workshop on Transverse Polarisation Phenomena in Hard Processes, Como, Italy, Sep 2005. hep-ex/0512001

9. **Exploring the proton's spin at PHENIX**. C. Aidala for the PHENIX Collaboration. Proceedings of the International School of Subnuclear Physics: 42nd Course: How and Where to Go Beyond the Standard Model, Erice, Italy, Aug – Sep 2004. hep-ex/0501054

10. **Single-spin transverse asymmetry in neutral pion and charged hadron production at PHENIX**. C. Aidala for the PHENIX Collaboration. Proceedings of the 12th International Workshop on Deep Inelastic Scattering (DIS 2004), Strbske Pleso, Slovakia, Apr 2004. 1059-1062. hep-ex/0410003

11. **Proposed detector upgrade for measuring low-mass lepton pairs in PHENIX**. C. Aidala for the PHENIX Collaboration. Proceedings of the Conference on the Intersections of Particle and Nuclear Physics, New York, NY, May 2003. AIP Conf. Proc. 698:793-796, 2004.

12. **Proposal for a hadron blind detector for PHENIX**. A. Kozlov et al. Presented at the Fourth International Workshop on Ring Imaging Cherenkov Detectors (RICH2002), Pylos, Greece, Jun 2002. physics/0307101

13. **Detector effects on the asymmetry A_1: The measurability of the polarized structure function g_1 of the proton**. C. Aidala, A. Deshpande, V. Hughes. Proceedings of the Workshop on Polarized Protons at High Energies – Accelerator Challenges and Physics Opportunities, Hamburg, Germany, May 1999. 248-251.

PH.D. THESIS:

Measurement of the transverse single-spin asymmetry for mid-rapidity production of neutral pions in polarized p+p collisions at 200 GeV center-of-mass energy. C.A. Aidala. Columbia University, December 2005. hep-ex/0601009

OTHER PUBLICATIONS:

1. **The present and future of QCD**, P. Achenbach et al. QCD Town Meeting White Paper as input to the 2023 NSAC Long Range Plan. arXiv:2303.02579

2. **Advanced accelerator linear collider demonstration facility at intermediate energy**, C. Benedetti et al. Snowmass 2021 Letter of Interest. arXiv:2203.08425

3. **New opportunities at the photon energy frontier**, S. Klein et al. Snowmass 2021 Letter of Interest. arXiv:2009.03838

4. **The LHCSpin Project**, C.A. Aidala et al. Submitted as community input to the European Particle Physics Strategy Update 2018-2020. CERN-ESPP-Note-2018-111. arXiv:1901.08002

5. **An EIC Detector Built Around the sPHENIX Solenoid: A Detector Design Study**, C. Aidala et al. sPHENIX-note sPH-cQCD-2018-001. Submitted to Brookhaven National Laboratory management Oct 2018.

6. **Letter of Intent: A New QCD Facility at the M2 beam line of the CERN SPS**, B. Adams et al. CERN-SPSC-2019–003. arXiv:1808.00848

7. **An Assessment of U.S.-Based Electron-Ion Collider Science**, by the National Academies of Science Committee on U.S.-Based Electron-Ion Collider Science Assessment. DOI 10.17226/25171. `https://www.nap.edu/catalog/25171/an-assessment-of-us-based-electron-ion-collider-science`.

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