

James L. Drachenberg, Ph.D.

Department of Engineering and Physics, Abilene Christian University, Abilene, TX 79699

Education:

Ph.D. in Physics 2004-2012	Texas A&M University, College Station, TX 77843 <i>Dissertation:</i> Forward Di-hadron Asymmetries from Polarized-proton Collisions at $\sqrt{s} = 200$ GeV
Advisor	Carl A. Gagliardi
B.S. in Physics 2000-2004	Abilene Christian University, Abilene, TX 79799 Summa Cum Laude, University Honors

Awards: RHIC & AGS Merit Award (2018)

Grants:

2020-2023	DOE: <i>The Spin and Anti-Quark Structure of the Nucleon</i> (DE-FG02-03ER41243). Daugherty, Drachenberg, Isenhower, Watson	\$793,000
2019-2021	NSF: <i>MRI Consortium: Development of a Forward Calorimetry Upgrade for the STAR Detector</i> (1920077). Wissink (IU), Drachenberg (ACU), Fatemi (UKY), Gagliardi (TAMU), Lisa (OSU)	\$1,950,000
2017-2020	DOE: <i>The Spin and Anti-Quark Structure of the Nucleon</i> (DE-FG02-03ER41243). Daugherty, Drachenberg (2018-2020), Isenhower, Towell, Watson	\$725,000

Research:

Associate Professor Fall 2018-present	Abilene Christian University, Abilene, TX 79699 Member of STAR collaboration at RHIC • Deputy spokesperson (2018-2020) • Representative to STAR institutional council • Coordinate production of scintillator tiles for the forward hadron calorimeter at ACU • Chair of STAR Analysis Blinding Committee • Chair and member of publication Godparent Committees • Organizing committee member for 2018 Winter Analysis Meeting • Undergraduate research mentor • Shift leader and trainer during collider running and data-taking Co-convener of “3D Structure of the Nucleon: TMDs” parallel session at
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23rd International Spin Symposium in Ferrara, Italy

Assistant Professor
Fall 2015-Spring
2018

Lamar University, Beaumont, TX 77710

Member of STAR collaboration at RHIC

- Deputy spokesperson
- Co-convener of the Spin Physics Working Group (2014-2017)
- Chair of STAR Analysis Blinding Committee
- Chair and member of publication Godparent Committees
- Member of writing committee for STAR Beam Use Request for 2017
- Program committee member for Fall 2016, Spring 2017, and winter 2018 STAR Collaboration Meetings
- Undergraduate research mentor
- Shift leader and trainer during collider running and data-taking

Visiting Assistant
Professor
Spring 2015

Valparaiso University, Valparaiso, IN 46383

Member of STAR collaboration at RHIC

Postdoctoral Fellow
2012-2014

- Co-convener of the Spin Physics Working Group
- Principal analyst of transverse single-spin asymmetries in hadrons within jets from polarized-proton collisions
 - First observation of Collins asymmetry in $p + p$ collisions
 - Experimental tests of TMD factorization and the evolution of TMD fragmentation functions
 - First measurement of “Collins-like” asymmetry sensitive to linearly polarized gluons in a polarized proton
 - First analysis of transverse asymmetries from jets in central pseudorapidity ($|\eta| < 1$) and $\sqrt{s} = 500$ GeV
- Leading studies of spin-dependent phenomena at intermediate pseudorapidity ($1 < \eta < 2$)
 - First analysis of transverse single-spin asymmetries from inclusive neutral pions at intermediate pseudorapidity
 - Led the effort toward successful publication of neutral pion cross section, longitudinal and transverse spin asymmetries at intermediate pseudorapidity
- Writing committee member for RHIC Spin White Paper
- Writing committee member for future opportunities for $p + p$ and $p + A$ collisions at RHIC, requested by BNL management
- Organizing committee member for the Spin Workshop at the 2013 RHIC/AGS Users’ Meeting
- Spin Physics Working Group representative to the Data/Simulation Embedding Group
- Shift leader and trainer during collider running and data-taking

Research Assistant

Texas A&M University, College Station, TX 77843

2005-2012

Member of STAR collaboration at RHIC:

- Active member in the spin physics working group
- Leading analyst of spin-dependent phenomena at forward pseudorapidity ($2.5 < \eta < 4$)
 - First measurement of transverse single-spin asymmetries in neutral pion-charged particle correlations at forward pseudorapidity from polarized-proton collisions
 - Extended measurements of high-energy inclusive neutral pion asymmetries to low transverse momentum
- Active participant in STAR Forward Meson Spectrometer Upgrade
 - Participated in construction of Forward Meson Spectrometer to study nucleon spin structure and nuclear gluon densities
 - Assembled LED-monitoring system upgrade
- Participated in offline quality control of STAR data
- STAR detector operator during collider running and data-taking
- Member of Godparent Committee for STAR publication
- Member of A&M's institutional review panel for STAR publications

Undergraduate
Researcher
2002-2004

Abilene Christian University, Abilene, TX 79699

Member of PHENIX collaboration at RHIC:

- Active participant in the installation of the PHENIX Muon Tracker
 - Assisted in initial installation of North Muon Arm
 - Assisted in initial upgrades to South Muon Arm
 - Studied means to improve tracking efficiency
- Shift assistant during collider running and data-taking

Teaching:

Associate Professor
Fall 2018-present

Abilene Christian University, Abilene, TX 79699

- Engineering Physics I: Mechanics, Newtonian Gravity, and Special Relativity (calculus-based, majors)
- Engineering Physics II: Waves, Electricity and Magnetism, and Modern Physics (calculus-based, majors)
- Engineering Physics I Laboratory
- Electricity and Magnetism (upper-level, majors)
- Classical Mechanics (upper-level, physics majors)
- Ronald E. McNair Scholars Research Mentor

Society of Physics Students co-advisor

Assistant Professor
Fall 2015-Spring
2018

Lamar University, Beaumont, TX 77710

- Introductory Physics: Waves, Electricity and Magnetism, and Modern Physics (algebra-based, non-majors)

	• Introductory Physics Laboratory • Data Reduction and Error Analysis (physics majors) • Quantum Mechanics (physics majors) • Ronald E. McNair Scholars Research Mentor • Society of Physics Students co-advisor
Visiting Assistant Professor Spring 2015	Valparaiso University, Valparaiso, IN 46383 • Data Reduction and Error Analysis (physics majors) • Introductory Physics: Waves, Electricity, and Magnetism (calculus-based, majors and non-majors)
Research Mentor 2012-2015	• Introductory Physics Laboratory • VU nuclear physics group undergraduate summer research mentor ○ Direct student research projects ○ Give introductory lectures on spin physics ○ Work one-on-one with students in developing and running analysis code in C++ • Work with students to develop posters for Conference Experience for Undergraduates at fall DNP meeting
Teaching Assistant 2004-2005	Texas A&M University, College Station, TX 77843 • Teaching Assistant for calculus-based Introductory Electricity and Magnetism ○ Taught problems-based recitation sessions and laboratories for honors and standard courses ○ Served as exam grader • Classes composed of traditional and non-traditional students from physics and engineering
Teaching Assistant 2003-2004	Abilene Christian University, Abilene, TX 79699 • Taught laboratory sessions for calculus-based and algebra-based introductory mechanics and electricity and magnetism • Classes composed of students from physics, computer science, chemistry, and biological sciences, including pre-medical.

Professional Memberships: American Physical Society (APS), member since 2002

Research Students Supported

In the table below, I list the undergraduate students I have mentored and supported in research, including the years supported, the project, and where they went after graduation.

Name	Major	Year	Project	Next Step
Emily Branson	Physics	2019-2020	STAR Forward Upgrade	Current student
Samuel Brandt	Physics	2014	STAR	National Institute of Standards & Technology (Intern)
Isla Casey	Physics	2020	STAR Forward Upgrade	Current student
Trent Cavicchi	Engineering	2019	STAR Forward Upgrade	
Levi Chambers	Bible and Ministry	2020	STAR Forward Upgrade	Current student
Kathryn Davis	Liberal Studies	2019	STAR Forward Upgrade	
Ben Edwards	Physics	2020	STAR Forward Upgrade	Current student
Ihoza Fiable	Engineering	2020	Cell models in cancer Research (McNair Scholar)	Current student
Ty Fitch	Computer Science	2018-2019	STAR	Cognizant (Industry)
Ziyu Gao	Engineering	2020	STAR Forward Upgrade	Current student
Colton Gates	Engineering	2020	STAR Forward Upgrade	Current student
Diana Hernandez	Engineering	2019	STAR Forward Upgrade	
Alek Hutson	Physics	2018	STAR	Univ of Houston (Grad School)
Beth Jennings	Physics	2019-2020	STAR	Current student
Kolby Kiesling	Engineering	2019	ACU Cosmic Ray Tests (McNair Scholar)	Current student
Payton Kirk	Engineering	2020	STAR Forward Upgrade	Current student
Denis Lagat	Nursing	2020	STAR Forward Upgrade	Current student
Jacob Long	Physics	2013	STAR	Ph.D. Notre Dame (2020)
Jared Mayfield	Physics	2020	STAR Forward Upgrade	Current student
Lily McIntosh	Engineering	2019-2020	STAR Forward Upgrade	Current student
Madison Meador	Physics	2020	STAR Forward Upgrade	Current student
Noah Mitchell	Physics	2020	STAR Forward Upgrade	Current student
Amen Mugisha	Psychology	2019	STAR Forward Upgrade	
Diane Mukundwa	Engineering	2019-2020	STAR Forward Upgrade	Current student
Matthew Myers	Physics	2020	STAR Forward Upgrade	Current student
Josh Nicholson	Physics	2020	STAR Forward Upgrade	Current student
Winnie Nkutu	Nursing	2019	STAR Forward Upgrade	
Irene Rono	Nursing	2020	STAR Forward Upgrade	Current student
Roy Salinas	Physics	2018-2020	STAR (McNair Scholar)	Michigan State (Grad School)
Yunxi Wei	Mathematics	2019	STAR Forward Upgrade	
Suzanne Wheeler	Physics	2017	STAR (McNair Scholar)	Univ of Houston (Grad School)

Student Presentations:

Jacob Long, *Measuring Azimuthal Angular Resolution in $p^\uparrow + p \rightarrow jet + X$ and $p^\uparrow + p \rightarrow jet + \pi^\pm + X$ at $\sqrt{s} = 500$ GeV at STAR*, 2013 Fall Meeting of the APS Division of Nuclear Physics, Newport News, VA, October 2013 (poster).

Samuel Brandt, *Neutral Pion Asymmetries at Intermediate Pseudorapidity in Transversely Polarized $p + p$ Collisions at $\sqrt{s} = 200$ GeV*, 4th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, Waikoloa, HI, October 2014 (poster)

Suzanne Wheeler, *Multiplicities of Hadrons Within Jets at STAR*, 2017 Fall Meeting of the APS Division of Nuclear Physics, Pittsburgh, PA, October 2017 (poster)

Kolby Kiesling, *Designing an Integrated Data Acquisition System for a Modular Cosmic Ray Test Stand*, 2019 Fall Meeting of the APS Division of Nuclear Physics, Crystal City, VA, October 2019 (poster)

Lilian McIntosh, *Manufacturing Scintillator Tiles for the STAR Forward Upgrade*, 2019 Fall Meeting of the APS Division of Nuclear Physics, Crystal City, VA, October 2019 (poster)

Roy Salinas, *Monte Carlo simulation studies for unfolding hadron-in-jet multiplicity measurements at STAR*, 2019 Fall Meeting of the APS Division of Nuclear Physics, Crystal City, VA, October 2019 (talk)

Lilian McIntosh, *Manufacturing Scintillator Tiles for the STAR Forward Upgrade*, 2019 Physics Congress, Providence, RI, November 2019 (poster)

Roy Salinas, *Monte Carlo simulation studies for unfolding hadron-in-jet multiplicity measurements at STAR*, 2019 Physics Congress, Providence, RI, November 2019 (poster)

Invited Presentations:

June 2019: *STAR BUR 2022: 500 GeV pp run*. BNL Nuclear and Particle Physics Program Advisory Committee Meeting, Brookhaven National Laboratory, Upton, NY.

March 2019: *Recent results from RHIC*. Workshop on Novel Probes of the Nucleon Structure in SIDIS, e^+e^- and pp (FF2019), Duke University.

October 2018: *Case for STAR Forward Upgrades*. RHIC & AGS Users' Group Open Forum Meeting, Waikoloa, HI.

October 2018: *Investigating Hadronization and Nucleon Structure Through Hadrons Within Jets from Proton-Proton Collisions*. 5th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan, Waikoloa, HI.

September 2018: *3D Structure of the Nucleon: TMDs (parallel session summary talk)*. 23rd International Spin Symposium, Ferrara, Italy.

February 2018: *Studies of Hadrons within Jets at STAR*. Workshop on Fragmentation Functions 2018, Stresa, Lago Maggiore, Italy.

October 2017: *RHIC Cold QCD: The Familiar and the Frontier*. RHIC & AGS Users' Group Open Forum Meeting, Pittsburgh, PA.

April 2017: *Illuminating Nucleon Structure Through Polarized Proton-Proton Collisions at STAR*. XXV International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2017), Birmingham, United Kingdom.

September 2016: *Illuminating QCD and Nucleon Structure Through the Study of Hadrons Within Jets and Dihadron Correlations at RHIC*. 22nd International Spin Symposium (SPIN 2016), Champaign, IL.

April 2016: *Recent Developments in Transverse Spin Physics at RHIC*. Joint Spring 2016 Meeting of the Texas Sections of APS, AAPT, and Zone 13 of the SPS, Beaumont, TX.

October 2015: *Recent Developments in Transverse Spin Physics at RHIC*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2015), Santa Fe, NM.

May 2015: *Recent Transverse Spin Results from STAR*. BNL Nuclear Physics Seminar, Brookhaven National Laboratory, Upton, NY.

February 2014: *Recent Spin Results from STAR*. Lake Louise Winter Institute, Lake Louise, Alberta, Canada.

December 2013: *Overview of STAR Spin Measurements*. Indiana-Illinois Workshop on Fragmentation Functions, Indiana University, Bloomington, IN.

June 25, 2013: *STAR Transverse Spin*. 2013 RHIC & AGS Annual Users' Meeting, BNL, Upton, NY.

May 25, 2012: *Photons and Neutral Pions in the STAR Forward Meson Spectrometer*. STAR Topical Workshop: Fluctuations and Particle Identification, Rice University, Houston, TX.

Contributed Conference Presentations:

October 2019: *Investigating Nucleon Structure and Hadronization with Hadrons in Jets at STAR*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2019), Crystal City, VA.

August 2019: *Exploring Nucleon Structure and Hadronization with Dihadrons and Hadrons in Jets at STAR*. International Nuclear Physics Conference 2019 (INPC 2019), Glasgow, United Kingdom.

May 2018: *Cold-QCD Physics of the STAR Forward Upgrade*. Thirteenth Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2018), Indian Wells, CA.

October 2017: *Illuminating QCD and Nucleon Structure Through the Study of Hadrons Within Jets at STAR*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2017), Pittsburgh, PA.

April 2015: *Constraining Transversity and Nucleon Transverse-polarization Structure Through Polarized-proton Collisions at STAR*. XXIII International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2015), Dallas, TX.

August 2014: *Constraining Transversity and Nucleon Transverse-polarization Structure Through Polarized Proton Collisions at STAR*. 20th Particles and Nuclei International Conference (PANIC 2014), Hamburg, Germany.

October 2013: *Transverse Single-spin Asymmetries from $p^\uparrow + p \rightarrow jet + X$ and $p^\uparrow + p \rightarrow jet + \pi^\pm + X$ in the Central Pseudorapidity Range and $\sqrt{s} = 500$ GeV at STAR*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2013), Newport News, VA.

October 2013: *Transverse Single-spin Asymmetries from $p^\uparrow + p \rightarrow jet + X$ and $p^\uparrow + p \rightarrow jet + \pi^\pm + X$ at $\sqrt{s} = 500$ GeV at RHIC*. 13th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU 2013), Rome, Italy.

November 2011: *π^0 -Charged-particle Correlations at $2.5 < \eta < 4.0$ from $p^\uparrow + p$ Collisions at $\sqrt{s} = 200$ GeV*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2011), East Lansing, MI.

November 2010: *π^0 -Charged-particle Correlations at $2.5 < \eta < 4.0$ from $p^\uparrow + p$ Collisions at $\sqrt{s} = 200$ GeV*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2010), Santa Fe, NM.

October 2008: *π^0 Transverse Single-spin Asymmetries at $\eta = 4.1$ in $p + p$ Collisions at $\sqrt{s} = 200$ GeV*. The 18th International Symposium on Spin Physics (SPIN2008), Charlottesville, VA.

March 2007: *Status of the Forward Meson Spectrometer*. Joint Spring Meeting of the Texas Sections of APS, AAPT, and SPS, Abilene, TX.

October 2003: *Improvements to the PHENIX Muon Tracking Efficiency*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2003), Tucson, AZ.

October 2002: *Installation of the Muon Tracking Dry-air System of PHENIX*. Annual fall meeting of the APS Division of Nuclear Physics (DNP 2002), East Lansing, MI.

April 2002: *Harmony of Science and Faith*. Annual conference of the Great Plains Honors Council, Ft. Worth, TX.

Public Presentations:

June 2020: *Painting the Proton Pirouette: A deeper look a “natural Rotarian.”* Abilene Southwest Rotary Club Meeting, Abilene, TX.

February 2020: *Painting the Proton Pirouette.* Cosmic Café, Maslow Coffee Company, Abilene, TX.

September 2018: *It Doesn’t Add Up! The dizzying case of the spinning proton.* Cosmic Café, Monks Coffee Shop, Abilene, TX.

Collaboration Meeting Presentations:

August 2019: *500 GeV Fragmentation Functions.* STAR Collaboration Meeting, Cracow, Poland.

April 2019: *Status of Isobar Data Production and Analysis.* STAR Collaboration Meeting, Brookhaven National Laboratory, Upton, NY.

December 2018: *Update on Isobar Blinded Analyses Plans.* STAR Analysis Meeting, Brookhaven National Laboratory, Upton, NY.

July 2018: *The science of the forward upgrade: Cold QCD.* STAR Collaboration Meeting, Lehigh University, Bethlehem, PA.

January 2018: *Analysis Blinding Committee Report.* STAR Collaboration Meeting, Lawrence Berkeley National Laboratory, Berkeley, CA.

November 2017: *Report from the Analysis Blinding Committee.* STAR Analysis Meeting, Brookhaven National Laboratory, Upton, NY.

November 2017: *Fragmentation Functions from Pions Within Jets at $\sqrt{s} = 500$ GeV.* STAR Analysis Meeting, Brookhaven National Laboratory, Upton, NY.

May 2017: *Report from the STAR Spin Physics Working Group.* STAR Collaboration Meeting, Brookhaven National Laboratory, Upton, NY.

August 2016: *Report from the STAR Spin Physics Working Group.* STAR Collaboration Meeting, Columbus, OH.

August 2016: *TOF PID Correction for 2011 Jet+Pion Asymmetry Analysis.* STAR Collaboration Meeting, Columbus, OH.

November 2014: *Report from the STAR Spin Physics Working Group.* STAR Collaboration Meeting, Brookhaven National Laboratory, Upton, NY.

November 2014: *Jet Studies in Transversely Polarized Proton-proton Collisions at STAR*. STAR Collaboration Meeting, BNL, Upton, NY

February 2014: *Update on Jet Asymmetries from Transversely Polarized Proton Collisions*. STAR Collaboration Meeting, BNL, Upton, NY

February 2014: *Forward Upgrade Simulations: Status Report*. Face-to-face Meeting for $p + p/p + A$ Letter of Intent, BNL, Upton, NY

July 19, 2013: *Recent Highlights of the Transverse Spin Program*. STAR Analysis Meeting, Purdue University, West Lafayette, IN.

July 2013: *Jets from Run-11 Transversely Polarized Proton Collisions at 500 GeV*. STAR Analysis Meeting, Purdue University, West Lafayette, IN

February 2013: *Neutral Pion A_N in the EEMC: Status Report*. STAR Collaboration Meeting, BNL, Upton, NY

February 2013: *Jets from Run-11 Transversely Polarized Proton Collisions at 500 GeV: Full Statistics*. STAR Collaboration Meeting, BNL, Upton, NY

November 2012: *Single-spin Asymmetries in Jet Production from Run-11 $p^\uparrow + p$ 500 GeV Transverse*. STAR Analysis Meeting, Los Angeles, CA

November 2012: *Neutral Pions in the EEMC: Status Report*. STAR Analysis Meeting, Los Angeles, CA

August 2011: *π^0 -Charged-particle Correlations at $2.5 < \eta < 4.0$ from $p^\uparrow + p$ Collisions at $\sqrt{s} = 200$ GeV*. STAR Analysis Meeting, Davis, CA

March 2011: *π^0 -Charged-particle Correlations at $2.5 < \eta < 4.0$ from $p^\uparrow + p$ Collisions at $\sqrt{s} = 200$ GeV*. STAR Analysis Meeting, BNL, Upton, NY

November 2010: *π^0 -Charged-particle Correlations at $2.5 < \eta < 4.0$ from $p^\uparrow + p$ Collisions at $\sqrt{s} = 200$ GeV*. STAR Collaboration Meeting, BNL, Upton, NY

June 2010: *FMS+FTPC Analysis Status Report*. STAR Analysis Meeting, Los Angeles, CA

October 2009: *FMS+FTPC Analysis Status Report*. STAR Collaboration Meeting, LBNL, Berkeley, CA

July 2009: *FMS+FTPC Analysis Status Report*. STAR Analysis Meeting, Cambridge, MA

October 2008: *π^0 Transverse Single-spin Asymmetries at $\eta = 4.1$ in $p + p$ Collisions at $\sqrt{s} = 200$ GeV*. RHIC Spin Collaboration Meeting, Stony Brook, NY

September 2008: *π^0 Transverse Single-spin Asymmetries at $\eta = 4.1$ in $p + p$ Collisions at $\sqrt{s} = 200$ GeV*. STAR Analysis Meeting, BNL, Upton, NY

November 2006: *Status of the Forward Meson Spectrometer*. RHIC Spin Collaboration Meeting, BNL, Upton, NY

James L. Drachenberg, Ph.D.

Department of Engineering and Physics, Abilene Christian University, Abilene, TX 79699

Publications List

Publications for Which I Was a Principal Author

L. Adamczyk *et al.* (STAR Collaboration), *Azimuthal transverse single-spin asymmetries of inclusive jets and charged pions within jets from polarized-proton collisions at $\sqrt{s} = 500$ GeV*, Phys. Rev. D 97, 032004 (2018).

L. Adamczyk *et al.* (STAR Collaboration), *Neutral pion cross section and spin asymmetries at intermediate pseudorapidity in polarized proton collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. D 89, 012001 (2014).

Publications to Which I Made a Direct Contribution

J. Adam *et al.* (STAR Collaboration), *Longitudinal double-spin asymmetry for inclusive jet and dijet production in pp collisions at $\sqrt{s} = 510$ GeV*, Phys. Rev. D 100, 052005 (2019).

I served as co-convener of the physics working group that oversaw the development of the analysis leading up to publication

J. Adam *et al.* (STAR Collaboration), *Measurement of the longitudinal spin asymmetries for weak boson production in proton-proton collisions at $\sqrt{s} = 510$ GeV*, Phys. Rev. D 99, 051102 (2019).

I served as co-convener of the physics working group that oversaw the development of the analysis leading up to publication

J. Adam *et al.* (STAR Collaboration), *Measurements of the transverse-momentum-dependent cross sections of J/ψ production at mid-rapidity in proton+proton collisions at $\sqrt{s} = 510$ and 500 GeV with the STAR detector*, Phys. Rev. D 100, 052009 (2019).

I served on the STAR internal institutional review panel for this paper

J. Adam *et al.* (STAR Collaboration), *Transverse spin transfer to Λ and $\bar{\Lambda}$ hyperons in polarized proton-proton collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. D 98, 091103 (2019).

I served as co-convener of the physics working group that oversaw the development of the analysis leading up to publication

J. Adam et al. (STAR Collaboration), *Improved measurement of the longitudinal spin transfer to Λ and $\bar{\Lambda}$ hyperons in polarized proton-proton collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. D 98, 112009 (2018).

I served as co-convener of the physics working group that oversaw the development of the analysis leading up to publication

J. Adam et al. (STAR Collaboration), *Longitudinal double-spin asymmetries for π^0 s in the forward direction for 510 GeV polarized pp collisions*, Phys. Rev. D 98, 032013 (2018).

I chaired the GPC that helped review and refine the manuscript through STAR internal review into publication

L. Adamczyk et al. (STAR Collaboration), *Transverse spin-dependent azimuthal correlations of charged pion pairs measured in $p^\uparrow + p$ collisions at $\sqrt{s} = 500$ GeV*, Phys. Lett. B 780, 332 (2018).

I served on the GPC that helped review and refine the manuscript through STAR internal review into publication

L. Adamczyk et al. (STAR Collaboration), *Measurement of the cross section and longitudinal double-spin asymmetry for di-jet production in polarized pp collisions at $\sqrt{s} = 200$ GeV*, Physical Review D 95, 071103(R) (2017).

I served on the GPC that helped review and refine the manuscript through STAR internal review into publication

L. Adamczyk et al. (STAR Collaboration), *Measurement of the Transverse Single-Spin Asymmetry in $p^\uparrow + p \rightarrow W^\pm/Z^0$ at RHIC*, Phys. Rev. Lett. 116, 132301 (2016).

I served as co-convener of the physics working group that oversaw the development of the analysis leading up to publication

L. Adamczyk et al. (STAR Collaboration), *Measurement of interaction between antiprotons*, Nature 527, 345 (2015).

I served on the internal STAR institutional review panel for this paper

L. Adamczyk et al. (STAR Collaboration), *Observation of Transverse Spin-Dependent Azimuthal Correlations of Charged Pion Pairs in $p^\uparrow + p$ at $\sqrt{s} = 200$ GeV*, Phys. Rev. Lett. 115, 242501 (2015).

I served on the GPC that helped review and refine the manuscript through STAR internal review into publication

L. Adamczyk et al. (STAR Collaboration), *Precision Measurement of the Longitudinal Double-Spin Asymmetry for Inclusive Jet Production in Polarized Proton Collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. Lett. 115, 092002 (2015).

I participated in the local group meetings where the analysis was developed

L. Adamczyk et al. (STAR Collaboration), *$\Lambda\Lambda$ Correlation Function in $Au + Au$ collisions at $\sqrt{s_{NN}} = 200$ GeV*, Phys. Rev. Lett. 114, 022301 (2015).

I served on the internal STAR institutional review panel for this paper

L. Adamczyk *et al.* (STAR Collaboration), *Transverse single-spin asymmetry and cross section for π^0 and η mesons at large Feynman x in $p^\uparrow + p$ collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. D 86, 051101(R) (2012).

I was an active participant in group discussions developing this analysis

M. M. Aggarwal *et al.* (STAR Collaboration), *Measurement of the parity-violating longitudinal single-spin asymmetry for $W^\pm$ boson production in polarized proton-proton collisions at $\sqrt{s} = 500$ GeV*, Phys. Rev. Lett. 106, 62002 (2011).

I served on the internal STAR institutional review panel for this paper

M. M. Aggarwal *et al.* (STAR Collaboration), *Measurement of the Bottom contribution to non-photon electron production in $p + p$ collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. Lett. 105, 202301 (2010).

I served on the internal STAR institutional review panel for this paper

STAR Collaboration, *Observation of an Antimatter Hypernucleus*, Science 328, 58 (2010).

I served on the internal STAR institutional review panel for this paper

B.I. Abelev *et al.* (STAR Collaboration), *System size dependence of associated yields in hadron-triggered jets*, Phys. Lett. B 683, 123 (2010).

I served on the internal STAR institutional review panel for this paper

B.I. Abelev *et al.* (STAR Collaboration), *Longitudinal Double-Spin Spin Asymmetry and Cross Section for Inclusive Neutral Pion Production in Polarized Proton Collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. D 80, 111108(R) (2009).

I served on the GPC that helped review and refine the manuscript through STAR internal review into publication

B.I. Abelev *et al.* (STAR Collaboration), *Forward Neutral Pion Transverse Single Spin Asymmetries in $p + p$ Collisions at $\sqrt{s} = 200$ GeV*, Phys. Rev. Lett. 101, 222001 (2008).

I was an active participant in group discussions developing this analysis

Conference Proceedings

J.L. Drachenberg (STAR Collaboration), *Illuminating Nucleon Structure Through Polarized Proton-Proton Collisions at STAR*, proceedings of the XXV International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2017), Birmingham, UK, PoS DIS2017 (2018) 252.

J.L. Drachenberg (STAR Collaboration), *Constraining Transversity and Nucleon Transverse-polarization Structure Through Polarized Proton Collisions at STAR*, proceedings of the XXIII International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2015), Dallas, TX, PoS DIS2015 (2015) 193.

J.K. Adkins and J.L. Drachenberg (STAR Collaboration), *Azimuthal Single-Spin Asymmetries of Charged Pions in Jets in $\sqrt{s} = 200$ GeV $p^\uparrow p$ Collisions at STAR*, proceedings of the 21st International Symposium on Spin Physics (Spin2014), Beijing, China.

J.L. Drachenberg (STAR Collaboration), *Constraining Transversity and Nucleon Transverse-polarization Structure Through Polarized Proton Collisions at STAR*, proceedings of the 20th Particles and Nuclei International Conference (PANIC 2014), Hamburg, Germany.

J. Drachenberg for the STAR collaboration, *Transverse Single-spin Asymmetries from $p^\uparrow + p \rightarrow jet + X$ and $p^\uparrow + p \rightarrow jet + \pi^\pm + X$ at $\sqrt{s} = 500$ GeV at RHIC*, proceedings of the 13th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon (MENU 2013), Rome, Italy.

S. Gliske and J. Drachenberg for the STAR collaboration, *Forward Neutral Pion Cross Section and Spin Asymmetry Measurements at STAR*, proceedings of the XXI International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS 2013), Marseille, France, Proc. Sci., DIS2013 (2013) 240.

J.L. Drachenberg for the STAR collaboration, *π^0 Transverse Single-Spin Asymmetries at $\eta = 4.1$ in $p + p$ Collisions at $\sqrt{s} = 200$ GeV*, proceedings of the the 18th International Symposium on Spin Physics (SPIN2008), Charlottesville, VA, AIP Conf. Proc. 1149, 517 (2009).

L.C. Bland *et al.* (STAR Collaboration) *Future of low- x forward physics at RHIC*, proceedings of the 1st International Conference on Hard and Electromagnetic Probes of High Energy Nuclear Collisions (Hard Probes 2004), Eur. Phys. J. C 43, 427 (2005).

Other Publications

As a member of the STAR Collaboration (and due to past work on the PHENIX Collaboration), I am also co-author on publications (largely concerning analyses of heavy-ion collisions) where my name is included along with many others from the large collaboration. These policies at STAR and PHENIX are in place because it takes all of these collaborators to make the large and complex experiments work successfully. My direct contributions to the physics analyses in these publications were not substantial, however my group and I have assisted in the data taking runs every year. This full list of publications is available upon your request or at the following link:

<https://inspirehep.net/literature?sort=mostrecent&size=25&page=1&q=drachenberg&ui-citation-summary=true>