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Research Interest

Nuclear and Particle Physics:

- Dynamics of strongly interacting particles, hadrons, and their elementary constituents, quarks and gluons, via the study of the hadronization and fragmentation processes that probe the dynamics of quark propagation and hadron formation in the cold nuclear matter, and the color transparency phenomenon; that is, the formation and evolution of small size configurations to regular hadrons as well as unraveling the effect of in-medium modifications of the transverse momentum distributions (TMDs) in nuclei.
- Nucleon structure via the study of the antiquark asymmetry and some medium stimulated effects such as the quark energy loss and the "EMC" effect using the unpolarized Drell-Yan (DY) process as well as the study of the sea-quark Sivers functions, the poorly known gluon/Twist-3 TMDs via the J/Ψ production, and the transverse polarization, or transversity, distribution on the polarized DY production.

Employment History

- August 2020 – Present — Associate Professor, Department of Physics and Astronomy, Mississippi State University.
- May 2019 – Aug. 2020 — Assistant Professor, Department of Physics and Astronomy, Mississippi State University.
- August 2014 – May 2019 — Assistant Professor Bridge Position, Mississippi State University Department of Physics and Astronomy and Jefferson Lab.
- Dec. 2013 – August 2014 — Postdoctoral Associate, Experimental Nuclear Physics Group, Department of Physics, Old Dominion Univ. jointly with Jefferson Lab.
  Advisor: Prof. Larry B. Weinstein
- May 2009 – May 2013 — Postdoctoral Associate, Experimental Nuclear Physics Group, Department of Physics & Astronomy, Rutgers, The State of New Jersey University.
  Advisor: Prof. Ronald Gilman
- July 2008 – January 2009 — Visiting Research Scholar, Experimental Nuclear Physics Group, Department of Physics and Astronomy, Rutgers, The State of New Jersey University.
  Advisor: Prof. Ronald Gilman
- Sept. 2003 – Dec. 2007 — Research Assistant, Medium Energy Physics Group, Physics Division, Argonne National Laboratory.
  Ph.D. Advisor: Dr. Kawtar Hafidi

Education

- June 2008 Ph.D. in Experimental Hadronic Physics,
  Mohammed V University, Rabat, Morocco.
- June 2003 Master in High Energy Physics,
  Mohammed V University, Rabat, Morocco.
- June 1999 Bachelor in Nuclear Physics,
  Abdelmalek Essaadi University, Tetouan, Morocco.

Teaching Experience:

- Teaching Graduate-level Seminars & Colloquia; PH-8111, since fall semester of 2020
- Taught Graduate-level Mechanics; PH-8213, in 2022 spring semester
- Taught Split-level Intermediate Mechanics II; PH-4223/6223, in spring semesters of 2024 2023, 2021, 2019-18 & 2016.
- Taught Graduate-level Nuclear Physics; PH-8613, in fall semesters of 2024/0 & 2018/4
- Taught Introductory Calculus-based Physics course; Physics III (PH-2233), in fall semesters of 2019 & 2016
- Taught Split-level Intermediate Mechanics I; PH-4213/6213, in fall semesters of 2017 & 2015

Experimental Affiliations and Contributions:

- Jefferson Lab 22 GeV Upgrade, 2022 - present:
  - ✔ Contributed as an Organizer, Convener, and Editor of the series of workshops related to the JLab 22 GeV beam energy and luminosity upgrade and its associated White Paper compiled for the Long Range Plan (LRP) charge of the Nuclear Science Advisory Committee (NSAC). My group is also part of to the simulation campaign of several studies such as Color Transparency (CT), Color Propagation and Hadronization, and Nuclear Deeply Virtual Compton Scattering.
- CLAS Collaboration, Hall B at Jefferson Lab, 2005 - present:
  - ✔ Led the preparation of my CLAS12 experiments, CT and its run-group addition Nuclear TMDs in CLAS12 as well as Color Propagation (hadronization and/or fragmentation study), that passed the ERR (experimental readiness review) in March 2019. These nuclear-target experiments ran, respectively, in fall of 2023 and spring of 2024 for the first-half of data-taking for the latter. The second-half of CP experiments is tentatively scheduled for 2026/2027.
  - ✔ Leading the artificial intelligence (AI) track reconstruction and particle identification for the “A Low Energy Radial Tracker” (ALERT) experiments.
  - ✔ Led the first-ever hadronization analysis of Λ^0 hyperons in the current and target fragmentation regions using datasets of the E02-110 & E02-104 electroproduction experiments (EG2 run-group), which was published in Physical Review Letters.
  - ✔ Participated in the development as well as calibration of the new 12 GeV CLAS (CLAS12) drift chambers (DC) suits. The primary contribution included developing, optimizing, and maintaining the DC calibration and monitoring suites, debugging the

tracking and reconstruction algorithms, training users, and coordinating the calibration process of various run-groups data-sets.

✔ Developed the data explorer suite to check and monitor the operation and the quality of data recorded on various CLAS12 sub-detectors.

✔ Participated in the development of a multi-threaded C++/ROOT-based analysis framework for the newly accumulated CLAS12 data-sets.

✔ Supervised the development of a JAVA-based tool for quality control of DC calibration.

✔ Participated in the analyses of coherent and incoherent deeply virtual Compton scattering off ^{4}He using data-sets of the E07-009 & E08-024 electro-production experiments (EG6 run-group). Primary contribution includes calibration of the time-of-light (TOF) and radio frequency (RF) systems, reconstruction of the entire data-sets, monitoring of data-quality, and maintaining the run-group software and databases.

✔ Assisted an ODU graduate student in the electromagnetic calorimeter (EC) time calibration and energy correction development for his EG6 analysis.

✔ Participated in the validation and debugging of the nuclear data-mining software that was developed with JAVA+PYTHON (JYTHON) to integrate the formerly processed and reviewed 6 GeV nuclear targets data in a common and user friendly analysis framework.

✔ Assisted in setting up the simulation chain for the proton analysis of the E03-006 electro-production experiment (EG4 run-group).

✔ Fine-tuned the deuterium analysis of the EG4 run-group experiment. Primary contribution includes debugging and validating the run-group's reconstruction software, reconstruction of the entire data-sets, completion of systematic studies using Monte-Carlo simulation, and mentoring my postdoc Dr. Krishna Adhikari in finalizing his thesis analysis that aimed to study the helicity-dependent inclusive cross section differences for deuteron at low momentum transfer, using longitudinally polarized electron beams and targets.

✔ Completed the development and improvement of the track fitter and Kalman filter for the upcoming BoNuS12 ("Barely off-shell Nucleon Structure") experiment.

✔ EG2 run-group main analyzer. Primary contribution includes monitoring of data-taking, calibration of TOF, RF and EC timing, reconstruction of the entire data-sets, extraction of the 5 GeV CT results, and assisting new group members especially (under-) graduate students to become familiar with the run-group software and analysis tools.

◆ Hall A Collaboration, Jefferson Lab, 2008 - present:

✔ Participated in the commissioning and shielding of the Bigbite Gas Cherenkov photomultipliers.

✔ Supervised a Rutgers graduate student in one thesis project related to the calibration of ^{3}He polarized target's cells to determine their wall thickness and target density using a low intensity laser beam.

◆ SeaQuest/E906 Collaboration, Fermi National Lab (Fermilab), 2009 – present:

✔ Assisted data-taking and analysis of the unpolarized Drell-Yan (DY) experiment

that aimed to study the sea antiquark asymmetry, $\bar{d}/\bar{u}$, and some medium stimulated effects such as the quark energy loss in cold nuclear matter.

✔ Co-led the effort of building a new drift chamber for the second run period. Primary contribution includes manually stretching and measuring the tension of all wires, formation of the gas seal windows, mentoring graduate and undergraduate students who participated in this process, and coordinating the work among the collaboration and Fermilab technicians.

✔ Led the refurbishment of the inherited set of drift chambers from the predecessor DY experiments, 9 out of 14 tracking chambers used in the E906 spectrometer. This contribution includes commissioning and maintaining the performance of DC, assisting their calibration, and maintaining their high voltage system and electronics readouts.

✔ Supervised an other Rutgers graduate student in his summer project and thesis analysis related to the DC repair, calibration, and tracking efficiency studies.

- SpinQuest/E1039 Collaboration, Fermilab, 2015 – present:

  ✔ Developing, optimizing, and maintaining a graphics processing unit (GPU) multi-threaded framework for online reconstruction to identify and debug any ongoing issues with data-taking in real time.

  ✔ Assisting the maintenance and upcoming commissioning of the inherited E906/SeaQuest drift chambers in the SpinQuest spectrometer.

  ✔ Providing support for operating, maintaining, and servicing the SpinQuest cryogenic and polarized solid-state ammonia (NH_3) and deuterated ammonia (ND_3) targets.

  ✔ Preparing for the day-one analysis that aims to study the poorly known gluon/Twist-3 TMDs using the J/Ψ events produced in the collision of an unpolarized 120 GeV proton beam and transversely polarized cryogenic, NH_3 and ND_3, targets.

- BDX Collaboration, Jefferson Lab, 2020 - present:

  ✔ Submitted in coordination with Lamar University, Canisius, and Occidental colleges the NSF Mid-Scale pre-proposal, which was not invited for the full proposal. My group interest is 1) the simulation of the shielding and overburden for the BDX experimental hall, and 2) the background simulation for the BDX detector package including the electromagnetic calorimeter and veto, their construction, and test.

- Electron-Ion Collider, BNL/JLab, 2022 – 2023:

  ✔ Submitted with colleagues from Creighton and Iowa State Universities, Universities of Kansas and Kentucky the NSF RII Track-2 FEC: The Electron-Ion Collider EPSCoR Initiative (EIC-EI) to create a consortium of multidisciplinary researchers to develop novel research and technology opportunities for the EIC. This new initiative supports building capacity and infrastructure in the collaborating institutions by a) hiring new tenure-track assistant professors (TTAP) in experimental nuclear physics, b) retaining assistant professors, c) training the next generation of (under-) graduate, students and early career scientists on state-of-the-art technology, including the latest advances in artificial intelligence, and d) supporting the research of faculty collaborators (*was not supported*).

Professional Organizations and Activities

- Organizer & Judge, Poster and Oral Presentations of undergraduate students in the 91st Annual Meeting of the Southeastern Section of the American Physical Society (SESAPS), 2024
- Ex-officio, SESAPS Regional Beams, Pegram and Slack Awards Review/Selection Process, 2024
- Co-organizer/Convener, “Science at the Luminosity Frontier: Jefferson Lab at 22 GeV” Workshop, INFN-LNF, Frsacati, Italy, 2024 – present
- Co-organizer, the joint "20th International Workshop on Hadron Structure and Spectroscopy" and the 5th Workshop on "Correlations in Partonic and Hadronic Interactions" (IWHSS-CPHI-2024), Yervan, Armenia, May – October 2024
- Member, JLab User Organization Board of Directors Nominating Committee, 2024 - present
- Vice Chair, SESAPS Executive Committee (EC) Chairline, 2024 – present
- Chair, Search Committee of the MSState JLab-bridge Experimental Nuclear Physics Faculty Position, 2023 - 2024
- Member, Review Panel for National Labs Medium Energy Research Programs, 2023
- Editor, JLab22 Upgrade Writing Committee for the NSAC LRP, 2022 – present
- Co-organizer/Convener, “Science at the Luminosity Frontier: Jefferson Lab at 22 GeV” Workshop, 2022 – 2023
- Member, APS Topical Group on Hadronic Physics (GHP) Nominating Committee, 2022 – 2023
- Co-organizer/Convener, ECT* Workshop for “Opportunities with JLab Energy and Luminosity Upgrade”, 2022
- Member, Program Committee of the SESAPS 89th Annual Meeting, Aug. - Nov. 2022
- Chair, In-person 89th Annual SESAPS Meeting Nuclear Physics Sessions, Nov. 2022
- Chair, Comprehensive Research-based Examination Implementation Committee @ Miss. State U. (MSState) Physics and Astronomy (P&A) Department, 2022
- Member, SURA (Southeastern Universities Research Association) / Jefferson Lab Committee, 2022 – present
- Member, Adhoc Preliminary Exams Committee @ MSState P&A Department, 2021-2022
- Member, Organizing Committee for the 2021 biennial workshop of the APS GHP, 2020 – 2021
- Chair, Search Committee of the MSState Experimental Nuclear Physics Faculty Position, 2021
- Chair, Virtual/Hybrid 87th/88th Annual SESAPS Meeting Medium Energy Physics Sessions, Nov. 2020/2021.
- Member, Program Committee for the GHP sessions at the 2021 APS April meeting, 2020
- Member, APS Forum on Diversity and Inclusion (FDI), 2020 – present
- Chair, SESAPS Nominating Committee for new EC Members, 2020 – 2022
- Organizer/Chair, Fundamental Symmetries Invited Session at the 86th Annual SESAPS Meeting, 2019.
- Member of the Recruiting Committee of MSState P&A Department, 2019 – present.
- Member, CLAS Coordinating Committee (CCC), 2019 – present
- Chair, CLAS Collaboration Nuclear Physics Working Group (NPWG), 2019 – present

- Chair, Nominating Committee for the NPWG Chair Election, Summer 2019 and 2016
- Member-at-Large, SESAPS EC, 2019 – 2022
- Reviewer, German Research Foundation Grant Proposals, 2019 – 2021
- Reviewer, Department Of Energy Grant Proposals, 2019 – present
- Reviewer, National Science Foundation Grant Proposals, 2018 – 2022
- Member, Women Club at Mississippi State University, 2018 – present
- Representative, Institutional Board of the SpinQuest Collaboration, 2018 – present
- Outreach Director, Jefferson Lab User Organization Board of Directors, 2017 – 2019
- Member, Ad-hoc Review Committee of CLAS Collaboration Nature paper, 2017
- Chair, Review Committee of two CLAS Collaboration proposals to the Jefferson Lab Program Advisory Committee (PAC), PAC 44/45, 2016/2017
- Representative, Institutional Board of the EIC Users Group, 2016 – present
- Member, Electron-Ion Collider Users Group, 2016 – present
- Secretary, CLAS Speakers Committee (CSC), 2015 – 2019
- Chair, Colloquium Committee of Miss. State U. P&A Department, 2015 – present
- Chair, Fall 2015 DNP Invited Session, Santa Fe, NM, "The (still) puzzling world of up and down quarks", October 31st, 2015
- Member, Colloquium Committee of Miss. State U. P&A Department, 2014 – present
- Representative of NPWG in CSC, 2014 – Present
- Member, International Women's Leadership Association (IWLA), 2015 – present
- Member, CLAS Collaboration Analysis Review Committees, 2011 – 2018
- Member, Association of Women in Science (AWIS), 2010 – present
- Member, SESAPS, Division of Nuclear Physics (DNP), Topical Group on Hadronic Physics (GHP), and Division of Particles & Fields (PDF), - present
- Member, Fermilab Users Organization Constitution, 2009 – present
- Member, American Physical Society, 2004 – present
- Member, Jefferson Lab User Organization, 2003 – present

Honors and Awards

- Miss. State U. Department of Physics & Astronomy, Robert Lee Cook Excellence in Graduate Teaching Award for my current GS Mohammad A. Zubair, Sept. 2024
- Jefferson Science Associates (JSA) Sabbatical Leave Support Award, 2023
- AWIS Member Spotlight, Nov. 2022
- Miss. State U. Office of Research & Economic Development, College of Arts & Sciences Faculty Research Award, 2021
- Hall B/Jefferson Lab, "Memorandum Of Understanding for Full Membership of Miss. State U. on the CLAS Collaboration", 2014 – 2020
- Jefferson Lab/Miss. State U., "Assistant Professor Bridge Appointment", 2014 - 2019
- MSState Student Research Symposium, First Poster Prize for former M.S. GS P. Ekanayaka, 2018
- CLAS Collaboration, Hall B/Jefferson Lab, "Full Membership", December 2016

- International Women's Leadership Association (IWLA), Top Female Professional, as a recognition of excellence in physics research and education, December 2015
- Jefferson Lab Thesis Prize Nominee, 2009
- Argonne National Lab, "Graduate Fellowship", 2003 – 2008

Research Grants and Travel Awards

- **91st SESAPS Annual Meeting Travel Support**, 2024, **$325** (for my current GS Uditha Weerasinghe)
- **U.S. Department Of Energy, "**Support of Polarized Solid-state Targets for the Fermilab E1039/SpinQuest Experiment", DE-FG02-07ER41528 *Supplemental Award*, **P.I.**, 09/2022 – 08/2024, **$258,000**
- **JSA/Jefferson Lab**, Sabbatical Leave Support Award, 2023, **$7,500**.
- **U.S. Department Of Energy,** "Precision Measurements at Medium Energy", DE-FG02-07ER41528, **Co-P.I.**, 09/2022 – 08/2025, **$1,882,000**, in which **P.I.** of **$864,482**
- **National Science Foundation,** "RII Track-2 FEC: The Electron Ion Collider EPSCoR Initiative (EIC-EI)" (*Not-awarded Proposal*), **Co-P.I**, 10/2022 – 09/2026, **$6 M**, in which **P.I.** of **$1,499,813** sub-award through Creighton University
- **National Science Foundation,** "Mid-scale RI-1: Implementation Plans for the Infrastructure and Superstructure for the Beam-Dump eXperiment (BDX) at Jefferson Lab" (Not-*awarded Pre-proposal)*, **Co-P.I**, 10/2021 – 09/2024, **$12,954,648**, in which **P.I.** of **$889,936** sub-award through Lamar University that was not funded
- **U.S. Department Of Energy,** "Precision Measurements at Medium Energy", DE-FG02-07ER41528, **Co-P.I.**, 09/2019 – 08/2022, **$1,787,000**, in which **P.I.** of **$714,800**.
- **Hall B of Jefferson Lab,** "1/2 Postdoctoral Research Associate Position for Dr. Taya Chetry", **P.I.,** 02/2019 - 08/2019, **$17,092**
- **U.S. Department Of Energy**, "Study of Gluon Tranverse Momentum Distributions with J/Ψ Production in the E1039 Polarized Drell-Yan Experiment", DE-FG02-07ER41528, **P.I.**, 09/2018 – 08/2019, **$125,000**
- **Hall B of Jefferson Lab**, "1/2 Postdoctoral Research Associate Position for Dr. Krishna Adhikari", **P.I.**, 01/2017- 05/2017, **$13,119**
- **U.S. Department Of Energy**, "Nuclear Dependence of Delta and Lambda Production", DE-FG02-07ER41528, **P.I.**, 09/2016 – 08/2019, **$314,000**
- **ODU Data-mining Research Fund**, travel award for my postdoc Dr. Krishna Adhikari to attend a workshop in July 2015, **$1,000**
- **ODU Data-mining Research Fund**, travel award to support my extended Jefferson Lab visit in Spring 2015, **$2,000**
- **ODU Data-mining Research Fund**, travel award for my postdoc Dr. Krishna Adhikari to attend a workshop in August 2014, **$1,100**
- **Jefferson Science Associates/Jefferson Lab**, G00000799, "Bridged-appointment Faculty Position", **Co-P.I.**, 08/2014 – 05/2019, **$242,724**

Advisory Experience

- **Postdoctoral Associates**:

- Dr. Vaniya Ansari, 2024 - present
- Dr. Mathieu Ouillon, 2024 - present
- Dr. Utsav Shrestha, 2024 - present
- Dr. Mikhail Yurov, 2022 – 2024
- Dr. Eric Fuchey, 2022 – 2023
- Dr. Catherine Ayuso, 2020 - 2022
- Dr. Taya Chetry, 2019 – 2022
- Dr. Hao Jiang, 2018 – 2019
- Dr. Md Latiful Kabir, 2017 – 2019
- Dr. Krishna Adhikari, 2014 – 2017

◆ **Graduate Students (GS)**:

- Sayantan Acharjya (Ph.D., expected 2029)
- Uditha Weerasinghe (Ph.D., expected 2028)
- Mohammad Assif Zubair (Ph.D., expected 2029)
- Matthew Maynes (Ph.D., expected 2028)
- Nuwan Chaminda (Thesis M.S., 2022)
- Shirsendu Nanda & Pubuduni Ekanayaka (non-Thesis M.S., 2019 & 2018, respectively)

Presentations (⁋*Invited Talks*)

◆ **Conference/Workshop**

- ⁋IWHSS-CPHI-2024, Joint 20th International Workshop on Hadron Structure and Spectroscopy Interactions, Sept. 30th, 2024: “Study of Hadronization Dynamics via Electroproduction off Nuclei at Jefferson Lab”
- ⁋GHP2023, APS Topical Group on Hadronic Physics Workshop, Apr. 13th, 2023: “Probing Hadronization Dynamics with SIDIS Production off Nuclei”.
- ⁋International Workshop on CLAS12 Physics and Future Perspectives at JLab, March 23rd, 2023: “Update on RG-D Status and Run Preparation”.
- ⁋Virtual Workshop on “Exploring QCD with Tagged Processes”, Oct. 22nd, 2021: “Chasing QCD Signatures in Nuclei with Lambda Fragmentation Study”.
- ⁋Virtual Workshop on The Future of Color Transparency and Hadronization Studies at Jefferson Lab and Beyond, June 7th, 2021: “Chasing QCD Signatures in Nuclei using Color Coherence Phenomena”.
- ⁋Next Generation Nuclear Physics with JLab12 and EIC Workshop, February 12th, 2016: “Hadronization with JLab 6/12 GeV”.
- ⁋International Workshop on Experimental and Theoretical Topics in CLAS Data Mining, July 27th, 2015: “Data Conversion Progress”.
- ⁋11th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2012), St. Petersburg, Florida, June 2012: “Overview of Color Transparency Measurements”.

- ⁋Nuclear Chromo-Dynamic Studies with a Future Electron Ion Collider Workshop, Argonne National Laboratory, Apr 2010: “CT in Rho Production”.
- Gordon Conference on Photonuclear Reactions, Aug. 2012: “Highlights of the E906/SeaQuest Experiment at Fermilab” (Poster).
- Gordon Conference on Photonuclear Reactions, Aug. 2012: “Search for the onset of Color Transparency in ρ^0 Electroproduction off Nuclei”.

By Research Group:

- ⁋INFN-LNF JLab22 Workshop: “Science at the Luminosity Frontier: Jefferson Lab at 22 GeV”, Dec. 12th, 2024: “Study of Tagged Processes with 4He and ALERT at 22 GeV” *(by current postdoc Dr. M. Ouillon)*
- GHP2023, APS Topical Group on Hadronic Physics Workshop, Apr. 12th, 2023: “Developing an AI Tracking for the CLAS12 ALERT Program” *(by former postdoc Dr. M. Yurov)*
- GHP2023, APS Topical Group on Hadronic Physics Workshop, Apr. 12th, 2023: “GPU-based Online Reconstruction for J/ψ TSSA at SpinQuest experiment*” (by former postdoc Dr. E. Fuchey)*
- ⁋Hybrid “Science at the Luminosity Frontier: Jefferson Lab at 22 GeV” Workshop, Jan. 25th, 2023: “Nuclear DVCS” *(by former postdoc Dr. M. Yurov)*
- Virtual 24th International Spin Symposium (SPIN2021), Oct. 19th, 2021: “Online Reconstruction on GPU for J/ψ TSSA Study at SpinQuest” *(by former postdoc Dr. C. Ayuso)*
- XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS2021), Virtual, Apr. 15th, 2021: “Study of Current and Target Fragmentation using Λ Electroproduction off Nuclei” *(by former postdoc Dr. T. Chetry)*
- APS/GHP 2021 Workshop, Virtual, Apr. 14th, 2021: *“Hunting Dibaryons: A study of the $\gamma d \rightarrow \pi^+ \pi^- d$ reaction using CLAS” (by former postdoc Dr. T. Chetry)*
- 2021 APS/GHP Workshop, Virtual, Apr. 14th, 2021: “Study of Current and Target Fragmentation using Λ Electroproduction off Nuclei” *(by former postdoc Dr. T. Chetry).*
- *2021* APS/GHP Workshop, Virtual, Apr. 14th, 2021: “GPU Online Reconstruction for J/ψ TSSA Study at SpinQuest *” (by former postdoc Dr. C. Ayuso)*
- APS/GHP 2019 Workshop, Denver, Colorado, Apr. 10 - 12, 2019: “Study of Λ Hyperon Fragmentation in Current and Target Regions using CLAS” *(by former postdoc Dr. T. Chetry)*
- APS/GHP 2019 Workshop, Denver, Colorado, Apr. 10 - 12, 2019: “Fracture Functions from Λ^0 Leptoproduction for Target Remnant Description” *(by former ANL postdoc and collaborator Dr. S. Johnston)*
- ⁋Jefferson Lab CLAS12 First Experiment Workshop, Newport News, Mar. 6th, 2018: “DC Calibration - status and plans” *(by former postdoc Dr. L. Kabir)*
- ⁋Jefferson Lab CLAS12 First Experiment Workshop, Newport News, Mar. 28th, 2017: “Drift Chambers Calibration” *(by former postdoc Dr. K. Adhikari)*
- ⁋Baryons 2016, Tallahasse, FL, May 16th - 20th, 2016: “New results on spin structure functions at very low momentum transfers from Jefferson Lab” *(by former postdoc Dr. K. Adhikari)*

- Jefferson Lab CLAS12 First Experiment Workshop, Newport News, Feb. 23rd, 2016: "Drift Chambers" *(by my former postdoc Dr. Krishna Adhikari)*
- International Workshop on Experimental and Theoretical Topics in CLAS Data-Mining, July 27th, 2015: "Hadronization of Λ^0 channel: analysis progress", (*by former postdoc Dr. K. Adhikari*)

- **Colloquium/Seminar/Meeting**
  - 2024 JLUO Annual Meeting, June 11th, 2024: "Probing Hadronization Mechanisms and Diquark Structure via Lambda Electroproduction off Nuclei".
  - APS 2024 April Meeting, Apr. 6th, 2024: "Probing Hadronization Dynamics and Diquarks Structure via Lambda Production off Nuclei".
  - MSState Physics & Astronomy Department Colloquium, Jan. 19th, 2024: "Chasing QCD signatures in atomic nuclei: How do we shrink the "rho" meson?"
  - Vtech Physics Department Colloquium, Oct. 27th, 2023: "QCD Signatures Quest: How do we shrink ρ-meson in atomic nuclei?"
  - 89th Annual Meeting of the Southeastern Section of the APS (SESAPS), Nov. 4th, 2022: "Exploring Hadronization Mechanisms with SIDIS Production off Nuclei"
  - 2022 APS/DNP Annual Meeting, Oct 30th, 2022: "Study of Color Transparency Phenomenon with Meson Production at Jefferson Lab"
  - University of South Alabama, Physics Department Colloquium, Feb. 10th, 2022: "Chasing QCD Signatures in Nuclei: How did we shrink the rho particle?"
  - Virtual 2021 APS/DNP Annual Meeting, "Chasing QCD Signatures in Nuclei via Color Transparency Study", Oct 13th, 2021
  - APS/DNP Annual Meeting 2020, Virtual, Oct 31st, 2020: "Chasing QCD Signatures in Nuclei"
  - Jefferson Lab CLAS Collaboration Meeting, Newport News, Nov. 13th, 2019: "RG-D readiness status"
  - Ohio University, Institute of Nuclear and Particle Physics Seminar, Oct. 22nd, 2019: "Highlights of Color Transparency Studies"
  - Mississippi State University, Department of Physics and Astronomy Colloquium, Oct. 7th, 2019: "QCD Signatures in Nuclei: Hadronization and Color Transparency Studies"
  - Jefferson Lab CLAS Collaboration Meeting, Newport News, June 19th, 2019: "RG-D readiness status"
  - Jefferson Lab CLAS Collaboration Meeting, Newport News, Nov. 14th, 2018: "RG-D and RG-E readiness and plans"
  - APS/DNP Annual Meeting 2018, Waikoloa, Hawaii, Oct 25th, 2018: "Highlights of Fragmentation Studies in CLAS"
  - EIC Users Group Meeting, Washington, D.C., July 31st, 2018: "QCD Signature in Nuclei: Hadronization and Color Transparency Studies in CLAS-6/12"
  - Jefferson Lab CLAS Collaboration Meeting, Newport News, Mar. 9th, 2018: "Study of Color Transparency in Exclusive Vector Meson Electroproduction off Nuclei"

* Fall APS/DNP Meeting, Oct. 28th, 2015: “The Emergence of Hadrons from QCD Color”
* Mississippi State University, Experimental Nuclear Physics Colloquium, May 5th, 2014: “Measuring Antiquarks in the Proton”
* Old Dominion University, Experimental Nuclear Physics Seminar, Jun 26th, 2013: “Recent Progress of the E-906/SeaQuest Drell-Yan Experiment at Fermilab”
* Jefferson Lab Hall-A, Experimental Physics Seminar, Jun 6th, 2013: “Drell-Yan measurements with the E906/SeaQuest Experiment at Fermilab”
* APS April Meeting, April 2011: “Hadronization Dynamics of Λ^0 Baryon”
* APS Meeting, Feb. 2010: “Measurement of the Anti-quark Distributions on Drell-Yan process”
* Rutgers University, Experimental Nuclear Physics Seminar, Oct. 2008: ”Search for the Onset of Color Transparency in Rho Electroproduction”
* Old Dominion University, Experimental Nuclear Physics Seminar, Nov. 2007: “Search for the Onset of Color Transparency @ CLAS Detector”
* Brookhaven National Laboratory, RHIC Spin Physics Seminar, Nov. 2007: “Search of Color Transparency using CLAS Detector”
* Ohio University, Medium Energy Physics Group Seminar, Nov. 2007: “Search for the Onset of Color Transparency @ CLAS Detector”
* Argonne National Laboratory, Medium Energy Physics Seminar, Dec. 2007: ”Search for Color Transparency in ρ^0 Electroproduction”
* Argonne National Laboratory, Student Lunch Seminar, Jan. 2007: “Chasing Color Transparency with Exclusive Vector Meson Electroproduction”
* Argonne National Laboratory, Medium Energy Physics Seminar, Feb. 2007: “Search for Color Transparency using CLAS Detector”
* Hampton University Graduate School (HUGS), June 2005: “Search for the Onset of Color Transparency @ CLAS: JLab E02-110 Experiment”

By Research Group:

* 91st SESAPS Annual Meeting, Oct. 25th, 2024: “Investigating Hadronization Mechanisms via Lambda SIDIS Production off Nuclei” *(by current GS U. Weerasinghe)*
* APS DNP 2024 Meeting, Oct. 9th, 2024: “Color Transparency Studies via ρ^0 Electroproduction Off Nuclei @ Jefferson Lab” *(by current GS M. Maynes)*
* APS DNP 2024 Meeting, Oct. 9th, 2024: “Hadronization Mechanisms via SIDIS Lambda Electroproduction with CLAS12 at Jefferson Lab” *(by current GS U. Weerasinghe)*
* APS DNP 2024 Meeting, Oct. 8th, 2024: “ “First Look at SpinQuest Studies with Polarized Targets” (by current postdoc V. Ansari)
* New Perspectives 2024, July 9th, 2024: “Overview of SpinQuest Polarized Target System” (by current postdoc V. Ansari)
* APS 2024 April Meeting, Apr. 5th, 2024: “Study of Color Transparency Phenomenon via Vector Meson Electroproduction Off Nuclei” *(by current GS M. Maynes)*

* APS April Meeting, Virtual, Apr. 26th, 2023: “Exploring AI Techniques for ALERT Tracking” *(by former postdoc Dr. M. Yurov)*
* APS April Meeting, Virtual, Apr. 26th, 2023: “GPU-based Online Reconstruction for J/ψ TSSA at SpinQuest experiment*” (by former postdoc Dr. E. Fuchey)*
* ⁋Fermilab SpinQuest Collaboration Meeting, Aug. 19th, 2022: “SpinQuest Slow Controls” *(by former postdoc Dr. M. Yurov)*
* ⁋Hybrid CLAS Collaboration Meeting, June 24th, 2022: “Probing Current and Target Fragmentation Regions via Λ Electroproduction off Nuclei” *(by former postdoc Dr. T. Chetry)*
* Virtual APS/DNP Annual Meeting, “Study of Λ SIDIS in current and target Fragmentation using CLAS”, Oct 14th, 2021 *(by former postdoc Dr. T. Chetry)*
* Virtual APS/DNP Meeting, Oct. 13th, 2021: “Online Reconstruction on GPU for J/ψ TSSA Study at SpinQuest” *(by former postdoc Dr. Catherine Ayuso)*
* ⁋*Virtual* 54th Annual Users Meeting, Aug. 3rd, 2021, “Probing Parton Distributions and Nucleon Structure in the SeaQuest and SpinQuest Experiments at Fermilab” *(by former postdoc Dr. C. Ayuso)*
* APS April Meeting, Virtual, Apr. 20th, 2021: “Study of Current and Target Fragmentation using Λ Electroproduction off Nuclei” *(by former postdoc Dr. T. Chetry)*
* APS April Meeting, Virtual, Apr. 19th, 2021: “GPU Online Reconstruction for J/ψ TSSA Study at SpinQuest *” (by former postdoc Dr. C. Ayuso)*
* Jefferson Lab CLAS Collaboration Meeting, Virtual, Nov. 12th, 2020: “Updates on Lambda Fragmentation Study EG2 datasets” *(by former postdoc Dr. T. Chetry)*
* Jefferson Lab CLAS Collaboration Meeting, Virtual, Nov. 11th, 2020: “DC Calibrations Studies” *(by former postdoc Dr. T. Chetry)*
* APS/DNP Annual Meeting, Virtual, Oct. 31st, 2020: “ Λ Fragmentation Study in the Current and Target Regions using CLAS” *(by former postdoc Dr. T. Chetry)*
* APS/DNP Annual Meeting, Virtual, Oct 30th, 2020: “Online monitoring software at the E1039/SpinQuest experiment” *(by former postdoc Dr. C. Ayuso)*
* Fall DNP Meeting, Oct. 15th, 2019: “Study of Λ Hyperon Fragmentation in Current and Target Regions using CLAS” *(by former postdoc Dr. T. Chetry)*
* ⁋Mississippi State University, Virtual Colloquia and Seminars Series, August 21st, 2020: “Exploring J/Ψ production at the E906/SeaQuest and E1039/SpinQuest experiments: nuclear effects, Sivers gluon function and improved online monitoring” *(by former postdoc Dr. C. Ayuso)*
* Jefferson Lab CLAS Collaboration Meeting, Virtual, Apr. 28th, 2020: “Unfolding Λ Hyperon Hadronization using CLAS EG2 data” *(by former postdoc Dr. T. Chetry)*
* 4th UM-MSU Joint Physics Research Symposium, Mississippi State, March 23rd, 2019: “Color Transparency Study in Vector Meson Electroproduction with CLAS12 at Jefferson Lab” *(by former M.S. GS S. Nanda)*
* E1039/SpinQuest Fall Collaboration Meeting, November 9th, 2018: “Plans for the E1039 Online Data Reconstruction with GPUs” (*by former postdoc Dr. H. Jiang*)

- APS/DNP Annual Meeting 2018, Waikoloa, Hawaii, Oct. 25th, 2018: “Study of Forward and Backward Fragmentation Processes in Λ^0 Leptoproduction” *(by former ANL postdoc and collaborator Dr. S. Johnston)*
- Jefferson Lab CLAS Collaboration Meeting, Newport News, July. 12th, 2018: “Studies of Hadronization from CLAS6 and Readiness for CLAS12” *(by former postdoc Dr. L. Kabir)*
- Jefferson Lab CLAS Collaboration Meeting, Newport News, July. 11th, 2018: “DC calibration and performances” *(by my former postdoc Dr. Latiful Kabir)*
- APS April Meeting, Columbus, Ohio, Apr. 16th, 2018: “CLAS12 Drift Chambers Tracking and Calibration” (P*oster by former postdoc Dr. Md L. Kabir)*.
- UM–MSU 2018 Joint Physics Research Symposium, Oxford, Apr. 8th, 2018: “Color Transparency Experiment: Motivation and Setup” *(poster by former MS GS P. Ekanayaka)*
- 16th Annual Graduate Student Research Symposium, Mississippi State, Feb. 17th, 2018: “Color Transparency Experiment: Motivation and Setup” *(poster by former M.S. GS P. Ekanayaka)*
- Physics Graduate Student Journal Club Colloquium, Mississippi State, Nov. 17th, 2017: “Color Transparency Experiment: Motivation and Setup" *(by former M.S. GS P. Ekanayaka)*
- Jefferson Lab CLAS Collaboration Meeting, Newport News, Oct. 5th, 2017: “Drift Chamber Tracking for CLAS12*''* *(by former postdoc Dr. L. Kabir)*
- APS April Meeting, Washington, DC, Jan. 28th - 31st, 2017: “New results on spin structure functions at very low momentum transfers from Hall B in Jefferson Lab” *(by former postdoc Dr. K. Adhikari)*
- Mississippi State University, Experimental Nuclear Physics Colloquium, Aug. 21st, 2014: “Measurement of deuteron's spin structure function g_1 and its moments at low momentum transfers (Q^2)” *(by my former postdoc Dr. K. Adhikari)*

Proposals

- Jefferson Lab 12-GeV Program, Contact person/Co-spokesperson of approved experiment E12-06-106/E12-06-106A&E12-06-117, “Study of Color Transparency in Exclusive Vector Meson Electroproduction off Nuclei”/“Nuclear TMDs in CLAS12” & “Quark Propagation and Hadron Formation”

Publication Summary

- Co-author of **207** papers; **8** in Nature, **2** in Nature Physics, **1** in Nature Communications, **1** in Science, and **55** in Phys. Rev. Letters. See my full publication list

Citation Summary (iNSPIRE)

- Total number of only published papers citations**: 10,471**, average citations per paper: **50.6**, where **1** paper listed with ***500+*** citations, **5** papers listed with ***250 - 499*** citations, **18** papers listed with ***100 - 249*** citations, **41** papers with ***50 - 99*** citations, **95** papers with ***10 – 49*** citations, and **47** papers with ***less than 10*** citations, leading to an h_{HEP} ***index*****: 58**