Laura B. Havener

Curriculum Vitae

Wright Laboratory, Yale University, New Haven, CT 06520

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APPOINTMENTS

Assistant Professor, Yale University, Department of Physics	July 2023 – present
Associate Research Scientist, Yale University	Mar. 2022 – July 2023
Postdoctoral Associate, Yale University	Mar. 2019 – Mar. 2022
Postdoctoral Research Scientist, Columbia University	Nov. 2018 – Feb. 2019

EDUCATION

Columbia University

Ph.D., Physics 2018

Thesis Title: *Precision measurements of jet quenching in relativistic heavy ion collisions at the LHC*

Thesis Advisor: Brian Cole

M.A., M.Phil, Physics 2015

The University of North Carolina at Chapel Hill

B.S., Physics, minor Mathematics 2012

RESEARCH GROUP

I am the co-PI of the Yale Relativistic Heavy Ion Group (RHIG). I lead a research program focused on jet physics and jet substructure measurements in heavy-ion collisions to probe the quark-gluon plasma. I also work on RICH detectors for the future Electron-Ion Collider (EIC).

Current Postdoc: Zoltan Varga

Current Graduate Students: Morgan Knuesel*, Ryan Hamilton†, Emily Pottebaum†, Andrew Tamis†, Iris Ponce†, Sierra Cantway†

** Primary supervisor, † Co-supervisor*

Current Undergraduate Students: Cleber Redondo*, Ulrik Lohne*, Richard Lin*† (Summer SEA Fellow), Lily Chatalbasheva*† (Summer SEA Fellow), Yasmine Samolada*

** Yale Physics Major Thesis Supervisees, † Yale Summer Research*

Past Graduate Students

Ananya Rai (now Harvard EPA master's program), co-supervised	Ph.D. 2025
Zoltan Varga, Wigner Research Centre (now Yale Postdoc), external mentee	Ph.D. 2024
Hannah Bossi (now MIT Postdoc), mentored as postdoc	Ph.D. 2023
Caitie Beattie (now medical school), mentored as postdoc	Ph.D. 2023

Past Undergraduate Students

Grace Purton* (now Imperial College, UK Ph.D. student)	Spring 2025
Olivia Birney*	Spring 2025
Henry Kaplan*, Howard L. Schultz Sr. Award for Research	2024 – 2025
Maddi Brown	Fall 2024
Daniel Zhang†, Alexander P. Hixon Summer Fellow	2024
Mary-Zihui Zhang, Colby College (now Yale undergraduate)	2022 – 2023

Past High School Students

Yale Pathways Research Internship Host Lab P.I.

Omare Goodson, Hill Regional Career High School — Summer 2025
Vikram Dalal, Wilbur Cross High School — Summer 2025

COLLABORATION MEMBERSHIP

ePIC Collaboration, BNL, Long Island, New York — 2023 – present
STAR Collaboration, BNL, Long Island, New York — 2023 – present
ALICE Collaboration, CERN, Geneva, Switzerland — 2019 – present
ATLAS Collaboration, CERN, Geneva, Switzerland — 2013 – 2019

RECENT COLLABORATION SCIENTIFIC RESPONSIBILITIES

Editorial Board Member, ALICE Collaboration — 2024 – present
ePIC Collaboration Council Member, Yale Representative — 2024 – present
Co-convener, ALICE Jets and Hard Photons Physics Working Group — 2022 – 2024
Co-coordinator, ALICE Jet Substructure Physics Analysis Group — 2021 – 2022
Coordinator for Jet Substructure Writing Group, ALICE Review Paper — 2020 – 2022

RECENT PROFESSIONAL ACTIVITIES

Program Committee, "A vision for U.S. leadership in relativistic heavy-ion physics" — 2026
Invited Participant, Kavli Institute for Theoretical Physics, UC Santa Barbara — Apr. 2026
Nominating Committee, APS Topical Group on Hadronic Physics (GHP) — 2025 – present
Organizing Committee, "Hot Jets 2025", Urbana, Illinois — 2024 – 2025
Co-host, ALICE-USA Collaboration Meeting, May 2024, Yale University — 2023 – 2024
Local Organizing Committee, LHCP 2024, Boston, MA — 2023 – 2024
Grant Reviewer, National Science Centre Poland — 2024, 2025
Reviewer, Physics Letters B — 2024, 2025
Co-convener for "New jet observables at colliders", INT Program — 2021
QCD parallel session co-convener, LHCP 2021 — 2020 – 2021
Invited Participant, EMMI Rapid Reaction Task Force, GSI, Darmstadt, Germany — Aug. 2019

HONORS AND AWARDS

P.I., DOE Generic R&D Grant Award [DE-SC0026345] — 2025 – 2026
High-performance RICH detector
co-P.I. (year 1), Key Personnel (years 2-3), DOE Grant [DE-SC004168] — 2025 – 2028
Yale Relativistic Heavy Ion Group
Breakthrough Prize in Fundamental Physics (awarded to LHC experiment authors during Run 2) — 2025
Women in STEM Spotlight, Women in Science at Columbia — 2018
Allan M. Sachs Teaching Award, Columbia University — 2017
NSF Graduate Research Fellowship, Honorable Mention — 2012

RECENT YALE COMMITTEE SERVICE

Yale Mossman Postdoctoral Fellowship Committee — 2023 – present
Prize Lecture and Physics Club Committee — 2024 – present
Graduate Admissions Committee — 2024 – 2025
Climate and Diversity Committee — 2023 – 2025
Outreach Committee — 2023 – 2025
AI/ML Initiatives Committee — Fall 2024
Co-coordinator for Wright Laboratory NPA Seminars — 2021 – 2022

RECENT TEACHING ACTIVITIES

Co-Instructor, PHYS 2000, Fundamentals of Physics I (UG)	Fall 2025
Faculty Teaching Academy, Poorvu Center	2024 – present
Instructor, Pathways Summer Scholars	July 2023, 2024, 2025
Instructor, PHYS 4420/5260, Intro to Particle and Nuclear Physics (UG/Graduate)	Spring 2025
Instructor, PHYS 5240, Introduction to Nuclear Physics (Graduate)	Fall 2024
Course (Re)Design Institute, Poorvu Center	May 2024
Instructor, PHYS 166L, General Physics Laboratory (UG)	Spring 2024
Instructor, PHYS 165L, General Physics Laboratory (UG)	Fall 2023

RECENT SELECTED OUTREACH AND SERVICE

Host Lab P.I., Pathways Summer Research Internship	Summer 2025
Instructor, Pathways Summer Scholars	July 2023, 2024, 2025
Session Organizer, Pathways Summer Scholars	July 2022, 2024, 2025
Speaker, Pint of Science, Local New Haven Bar	May 2024
Smashing Atoms: Understand the Strong Force	
Speaker, YPPDO Seminar	Feb 2024
Preparing for Faculty Positions	
Representative, Postdoctoral Advisory Committee, Yale Physics Department	2022 – 2023
Member, APS-IDEA Yale Physics Team	2020 – 2022
Mentor, Women in Science at Yale	2019 – 2021

INVITED TALKS AND PRESENTATIONS (PAST 5 YEARS)

18. Seminar, Wayne State, Detroit, MI — Apr. 2026
    Looking inside jets to explore QCD and the quark-gluon plasma
17. KITP, Probing the Understanding the quark-gluon matter, UC Santa Barbara — Apr. 2026
    Title TBD
16. Global Physics Summit 2026, Denver, CO — Mar. 2026
    Jets and Hard Probes at the LHC
15. Seminar, Cornell, Ithaca, NY — Feb. 2026
    Jet substructure probes of QCD and the quark-gluon plasma
14. CTU-Yale STAR Workshop 2025, Prague, Czech Republic — June 2025
    Recent ALICE Jet measurements from Yale
13. 2024 RHIC and AGS Annual Users' Meeting, BNL, Brookhaven, NY — June 2024
    Jet Experimental Overview
12. Plenary, Quark Matter, 2023, Houston, Texas — Sept. 2023
    Latest results on jet modification in relativistic particle collisions
11. Highlights Plenary, Hard Probes 2023, Aschaffenburg, Germany — Mar. 2023
    Jets and high p_{T} hadrons in the QGP
10. Colloquium, UT-Austin — Feb. 2023
    Exploring QCD with quarks, gluons, and the quark-gluon plasma
9. Overview Lecture, Hot Quarks 2022, Estes Park, Colorado — Oct. 2022
    Review of experimental jet results
8. Overview, CFNS Workshop, Stony Brook — Sept. 2022
    Latest techniques for studying both perturbative and non-perturbative physics with jets at colliders
7. ECT* Workshop, Jet quenching in the QGP, Trento, Italy — June 2022
    Studying the jet core with jet substructure
6. ALICE Upgrade Week, Remote — May 2022
    Jet prospects for ALICE 3

5. Overview Lecture, 2021 JETSCAPE Summer School, Remote — July 2021
   Experimental overview of heavy-ion results at the LHC
4. Plenary, LHCP 2021, Remote — June 2021
   Hard Probes of the QGP
3. Seminar, CERN EP LHC Invited Seminar, Remote — June 2020
   Recent Results on Jets and High-p_{T} with ALICE
2. LHCP 2020, Remote — May 2020
   Novel tools and challenges for jet physics in heavy-ion collisions
1. 2020 JETSCAPE Winter School and Workshop, Remote — Mar. 2020
   Recent measurements of jet substructure in Pb–Pb collisions with ALICE

SELECTED PUBLICATIONS

A selection of publications is listed below. The full list of 632 papers can be found at: https://inspirehep.net/literature?q=a+L.B.Havener.1

Publications in experimental collaborations with substantial contributions (i.e. principal author, internal reviewer, significant involvement through collaboration leadership, and/or mentorship)

15. "Measurement of Two-Point Energy Correlators within Jets in p+p Collisions at 200 GeV", STAR Collaboration, *PRL* **135** (2025) 11, 111901 arXiv:2502.15925 [mentoring lead analyzer]

14. "Search for quasi-particle scattering in the quark-gluon plasma with jet splittings in pp and Pb-Pb collisions at 5.02 TeV", ALICE Collaboration, *PRL* **135** (2025) 031901 arXiv:2409.12837 [physics working group convener for paper approval and analysis approval]

13. "Medium-induced modification of groomed and ungroomed jet mass and angularities in Pb-Pb collisions at 5.02 TeV", ALICE Collaboration, *PLB* **864** (2025) 139409 arXiv:2411.0316 [physics working group convener for paper approval and analysis approval]

12. "Measurement of the radius dependence of charged-particle jet suppression in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV", ALICE Collaboration, *PLB* **849** (2024) 138412, arXiv:2303.00593 [co-principal author, mentored lead analyzer]

11. "Modification of charged-particle jets in event-shape engineered Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV", ALICE Collaboration, *PLB* **851** (2024) 138584, arXiv:2307.14097 [mentored lead analyzer, physics working group convener for paper approval]

10. "The ALICE experiment – A journey through QCD", ALICE Collaboration, *EPJC* **84** (2024) 813 , arXiv:2211.04384 [coordinated jet substructure section writing team]

9. "Measurement of inclusive charged-particle jet production in pp and p-Pb collisions at $\sqrt{s} = 5.02$ TeV", ALICE Collaboration, *JHEP* **05** (2024) 041, arXiv:2307.10860 [internal review committee]

8. "Multiplicity dependence of charged-particle intra-jet properties in pp collisions at $\sqrt{s} = 13$ TeV", ALICE Collaboration, *EPJC* **84** (2024) 1079, arXiv:2311.13322 [physics working group convener for paper approval, physics analysis coordinator for analysis approval]

7. "Exposing the parton-hadron transition within jets with energy-energy correlators in pp collisions at 5.02 TeV", ALICE Collaboration, Sept 2024, submitted to *PRL* arXiv:2409.12687 [physics working group convener for paper approval and analysis approval]

6. "Measurement of the angle between jet axes in pp collisions at $\sqrt{s} = 5.02$ TeV", ALICE Collaboration, *JHEP* **07** (2023) 201, arXiv:2211.08928 [internal review committee]

5. "Measurements of the groomed jet radius and momentum splitting fraction with the soft drop and dynamical grooming algorithms in pp collisions at $\sqrt{s} = 5.02$ TeV", ALICE Collaboration, *JHEP* **05** (2023) 244 arXiv:2204.10246 [internal review committee]

4. "Measurement of the angle between jet axes in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV", ALICE Collaboration, Mar. 2023, submitted to *PRC*, arXiv:2303.13347 [physics working group convener for paper approval, physics analysis coordinator for analysis approval]

3. "Measurement of the groomed jet radius and momentum splitting fraction in pp and Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV", ALICE Collaboration, *PRL* **128** (2022) 102001. arXiv:2107.12984 [principal author]
(Supplemental Material: ALICE-PUBLIC-2020-006)

2. "Measurement of the nuclear modification factor for inclusive jets in Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the ATLAS detector", ATLAS Collaboration, *PLB* **790** (2019) 108. arXiv:1805.05635 [lead analyzer]

1. "Measurement of jet p_{T} correlations in Pb+Pb and pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV with the ATLAS detector", ATLAS Collaboration, *PLB* **774** (2017) 379. arXiv:1709.09363 [principal author]

IN THE NEWS

Yale mathematician and six physicists win prestigious Breakthrough Prizes, Yale FAS News	2025
Office Hours with… Laura Havener, Yale News	2024
Quark–gluon plasma narrows jets, CERN Courier	2021
Noble collisions give new insights on heavy ion systems, ATLAS physics briefing	2018