
Laura Cui

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EDUCATION

Ph.D. Physics, *California Institute of Technology* SEPT 2023 - PRESENT

⊗ Advised by John Preskill and Fernando Brandão

S.B. Physics and Mathematics, *Massachusetts Institute of Technology* SEPT 2019 - JUNE 2023

⊗ GPA: 4.9/5.0, Thesis: “Probing Local Many-Body Dynamics with Random Quantum Circuits”

AWARDS & HONORS

Sigma Pi Sigma Inductee 2023

Invited for outstanding scholarship in physics at MIT

NSF Graduate Research Fellowship Program Honorable Mention 2023

Received one of 825 honorable mentions

MIT Goldwater Scholarship Nomination 2022

Selected as one of two nominees from the MIT School of Science

Regeneron Science Talent Search Scholar 2019

Awarded for work on near-threshold doubly heavy tetraquark states

PUBLICATIONS & PREPRINTS

* denotes co-first authors

[1] **Laura Cui**,* Thomas Schuster,* Fernando Brandão, Hsin-Yuan (Robert) Huang, *Unitary designs in nearly optimal depth*. arXiv:2507.06216 [quant-ph] (2025).

RESEARCH TALKS & SEMINARS

Stanford Institute for Theoretical Physics, QIQC Seminar MAY 2025

“Designs and random dynamics in very low depth”

NUS Center for Quantum Technologies, Invited talk APR 2025

“Designs and random dynamics in very low depth”

MIT Center for Theoretical Physics, QIP Seminar JUNE 2023

“Random quantum circuits as a model for the classification of topological phases”

INVITED SCHOOLS & WORKSHOPS

Workshop on Random Quantum Circuits NOV 2024

QuSoft and Centrum Wiskunde & Informatica, Amsterdam, Netherlands

Cal-Bay Quantum School JUNE 2024

Munich Center for Quantum Science and Technology, Garching, Germany

TEACHING EXPERIENCE

California Institute of Technology

Teaching Assistant, *Ph 129b: Analytic Techniques in Mathematical Methods of Physics*

WINTER 2025

Teaching Assistant, *Ph 12: Waves, Quantum Physics, and Statistical Mechanics*

WINTER 2024 - FALL 2024

Massachusetts Institute of Technology

Undergraduate Teaching Assistant, *6.1200: Mathematics for Computer Science*

SPRING 2023

Lecturer and Head Grader, *18.S097: Proof-Writing Workshop*

WINTER 2021

Undergraduate Teaching Assistant, *8.02: Electricity and Magnetism*

FALL 2020

Other

Mentor, *MIT Physics Mentorship Program*

FALL 2021 - SPRING 2023

Residential Counselor, *MathROOTS @ MIT*

JUNE 2022 - JULY 2022

Teaching Assistant, *Art of Problem Solving Academy Gaithersburg*

NOV 2017 - JULY 2020

OTHER EXPERIENCE

Interuniversity Institute for Marine Sciences, *Research Assistant*

JUNE 2023 - AUG 2023

Supervised by Derya Akkaynak

MIT Center for Theoretical Physics, *Research Assistant*

JAN 2022 - JAN 2024

Supervised by Aram Harrow, Daniel Ranard

Caltech Institute for Quantum Information and Matter, *Research Assistant*

JUNE 2021 - AUG 2021

Supervised by John Preskill, Alexander Dalzell, Hsin-Yuan (Robert) Huang

MIT Research Laboratory of Electronics, *Research Assistant*

JUNE 2020 - AUG 2020

Supervised by Dirk Englund, Carlos Errando Herranz

J.P. Morgan Chase & Co., *Quantitative Research Intern*

JAN 2020

Rates Data Analytics Team

University of Maryland Joint Quantum Institute, *Research Assistant*

JUNE 2019 - AUG 2019

Supervised by Jacob M. Taylor, Daniel Carney

University of Maryland Center for Fundamental Physics, *Visitor*

JUNE 2018 - AUG 2018

Supervised by Thomas D. Cohen

blair3sat, *Co-founder, Optical Mission Lead*

SEPT 2017 - JUNE 2019

With Ryan Tse, Patrick Kim, Sujay Swain, Benjamin Cohen, and Gautom Das

Naval Research Laboratory, *Science and Engineering Apprenticeship Program*

JUNE 2017 - AUG 2017

Space Science Division

OUTREACH & COMMUNITY SERVICE

Caltech CUWiP 2028, Organizing Committee

PRESENT

Caltech FUTURE of Physics, Co-chair

SUMMER 2025

Caltech Gender Minorities and Women in PMA, Treasurer

FALL 2024 - PRESENT

Caltech PMA Graduate Student Advisory Board, Member

FALL 2023 - PRESENT

MIT Physics Values Committee, Undergraduate Representative

FALL 2021 - SPRING 2023

MIT Undergraduate Society for Women in Mathematics, President

SUMMER 2022 - SPRING 2023

MIT Undergraduate Womxn in Physics, Executive Board Member

SUMMER 2021 - SPRING 2023

MIT Society of Physics Students, Executive Board Member

SUMMER 2021 - SPRING 2023

MIT Educational Studies Program, Executive Board Member

FALL 2019 - FALL 2022

HMMT Education, Speaker

SPRING 2021 - FALL 2021