

Murali Manohar Saravanan

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Department of Physics
 University of Washington, Seattle
 Seattle, WA

Education	UNIVERSITY OF WASHINGTON, SEATTLE Ph.D. in Physics, expected December 2026 M.S. in Physics, December 2022 Advisor: Marilena Loverde CORNELL UNIVERSITY B.A. in Physics, Minor in East Asian studies, May 2020 <i>magna cum laude</i> Advisor: Liam McAllister	
Research Experience	LOVERDE COSMOLOGY GROUP Investigating how cosmological data can probe Beyond Standard Model physics and how to holistically interpret constraints given by data	2022-present
	MCALLISTER STRING THEORY GROUP Developed and tested optimization algorithms for Calabi-Yau manifolds constructed using 4-D reflexive polytopes and their applications for Type IIB string theory	2019-2020
	UM-CERN SEMESTER ABROAD PROGRAM Studied the capabilities of neural networks to discriminate and reconstruct the Cerenkov and scintillation radiation in particle collisions for the CMS collaboration (advised by Prof. Nural Akchurin and Dr. Federico De Guio).	2019
Publications	ABUNDANCE AND PROPERTIES OF DARK RADIATION FROM THE COSMIC MICROWAVE BACKGROUND Saravanan, M. M. , Brinckmann, T., Loverde, M., Weiner, Z.J., <i>JCAP</i> 08 (2025) 040. (ADS)	
Fellowships, Grants, & Awards	Graduate Student Excellence in Teaching (\$1,000) Washington NASA Space Grant Graduate Fellow (\$9,000) Graduate Student Excellence in Teaching Introductory Courses (\$1,000) NSF Graduate Research Fellowship Honorable Mention Cornell Chapter of Phi Beta Kappa Scholarship Prize (\$3,500) Ford Foundation Predoctoral Fellowship Honorable Mention Kievai Prize in Physics, awarded to undergraduate physics students who demonstrate unusual promise for future contributions to physics research (\$1,000)	2024 2023 2022 2022 2020 2020 2020
Invited Talks	Cosmology Seminar, Arizona State University, Tempe, AZ Particle Theory Seminar, University of Washington, Seattle, WA	Feb 2026 June 2025
Summer Schools	Dark Universe, Les Houches, France ACT + SPT CMB Summer School, Chicago, IL, USA Michigan Cosmology Summer School, Ann Arbor, MI, USA	July 2025 July 2024 June 2023
Collab. Meetings	CMB-S4 Summer Collaboration Meeting, online CMB-S4 Summer Collaboration Meeting, online	July 2024 March 2024

Leadership & Service	DUSC COSMOLOGY AND ASTROPARTICLE JOURNAL CLUB ORGANIZER	2024-present
	Leading the cosmology and astroparticle journal club meetings of the Dark Universe Science Center (DUSC) at the University of Washington. Duties include organizing the schedule, inviting speakers, and leading discussions.	
	UW GRADUATE AND PROFESSIONAL STUDENT SENATOR	2023-Present
	Represent the interests of the physics graduate student community in the University of Washington's Graduate and Professional Student Senate.	
	MEMBER OF LOCAL ORGANIZING COMMITTEE FOR CONFERENCE FOR UNDERGRADUATE WOMEN IN PHYSICS	2022-2023
	Chaired the Panels Subcommittee, which was responsible for inviting and coordinating over 30 speakers from academia and industry to workshops and panels on a wide range of topics, from intersectionality in physics to resume and career advice. Conference was attended by 150 undergraduate women and other underrepresented gender minority students from across the Pacific Northwest.	
	GRADUATE STUDENT REPRESENTATIVE ON COLLOQUIUM COMMITTEE	2021-2023
	Work with professors on the Colloquium Committee to invite speakers from other universities to give the weekly department colloquium.	
	GRADUATE STUDENT PEER MENTOR	2021-2022
	Mentored incoming first-year graduate students, providing advice on coursework and establishing research.	
Teaching Experience	TEACHING ASSISTANT, UNIVERSITY OF WASHINGTON	2020-Present
	Lead weekly recitations, labs, office hours and occasional lectures. Courses taught: introductory mechanics, electromagnetism, optics, thermodynamics, mathematical physics, quantum mechanics, neural network methods for physics, group theory, quantum field theory	
	TEACHING ASSISTANT, CORNELL UNIVERSITY	2017-2020
	Co-led weekly recitation and study halls for courses that covered introductory mechanics, fluid dynamics, electromagnetism, and optics.	
	TEACHING FELLOW, BREAKTHROUGH COLLABORATIVE TWIN CITIES	Summer 2017
	Created and piloted a physics curriculum for two classes of rising 8th grade students. Utilized inquiry-based learning methods to engage students in hands-on experiments and demonstrations to teach introductory high school mechanics.	
Outreach	HIGH ALTITUDE BALLOON WA SPACE GRANT GRADUATE FELLOW	2023-2024
	Led a team of undergraduate students in designing, building, and launching a high altitude balloon to study the solar eclipse in Ohio.	
	CLUBES DE CIENCIA INSTRUCTOR	June 2024
	Taught over twenty high school and college students in Guanajuato, Mexico about the Standard Model of particle physics over a week. Delivered an introductory Python course so that students could analyze data from the Large Hadron Collider.	
	SCIENCE EXPLORERS VOLUNTEER	2021-2022
	Volunteered at an after-school science program for 4th and 5th graders at Sanislo Elementary School, guiding students through lesson plans developed by fellow graduate student volunteers	