

# Bárbara Cruvinel Santiago

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<b>Education</b>	<b>Columbia University</b> – New York, NY, USA Physics Ph.D. Student; M.Phil in Physics (May 2021); M.A. in Physics (May 2020) <b>Yale University</b> – New Haven, CT, USA B.S. in Physics (Intensive Track), GPA: 3.68/4.0 <b>Colégio Objetivo</b> (High School) – Santos, SP, Brazil	Aug 2018 – Present Aug 2013 – May 2017 Jan 2010 – Dec 2012
<b>Research Experience</b>	<b>Graduate Research at Columbia (Schiminovich Group)</b> – New York, NY, USA Work in Prof. Schiminovich group on the development of the the next generation of UV detectors for the study of intergalactic and circumgalactic media emission. <b>Post-Bacc Research at MIT-LIGO (Mavalvala Group)</b> – Cambridge, MA, USA Work in Prof. Nergis Mavalvala's LIGO group on a optomechanical light squeezing experiment. Focus on noise characterization and on the development of a light intensity stabilization servo. <b>Undergraduate Research at Yale (DeMille Group)</b> – New Haven, CT, USA Work in Prof. David DeMille's group on the development and upgrade of hardware for his experiments. <b>Undergraduate Research at CERN (Demers Group)</b> – Meyrin, Switzerland Work in Prof. Sarah Demers' group at the ATLAS Experiment in the search for W,Z associated Higgs production.	Jan 2019 – Present Jul 2017 – Jun 2018 Jun 2015 – May 2017 Jun 2014 – Aug 2014
<b>Most Important Honors and Awards</b>	<b>Five Sigma Physicist Award</b> – USA American Physical Society Government Affairs award for outstanding advocacy. <b>Physicists Coalition's Next-Generation Fellowship</b> – USA One of 4 fellows in the year-long program sponsored by the American Physical Society and the Princeton Science & Global Security Program to train early-career scientists in nuclear threat reduction policymaking. <b>Future Investigators in NASA Earth and Space Science and Technology Fellowship</b> – USA NASA's 3-year graduate student fellowship awarded to student-designed research projects that contribute to NASA's exploration goals; formerly known as NESSF. <b>Yale College Dean's Research Fellowship in the Sciences</b> – New Haven, USA Summer award to do research at Yale and start senior thesis. <b>Pierson College Richter Summer Fellowship</b> – New Haven, USA Summer award to do research at Yale and start senior thesis. <b>Michele Dufault Memorial Scholarship for Yale Women in STEM</b> – New Haven, USA Academic year scholarship awarded to selected women pursuing STEM majors at Yale. <b>Tetelman Fellowship for International Research in the Sciences</b> – New Haven, USA Summer award to do research at CERN. <b>Science, Technology and Research Scholars Program I (STARS I)</b> – New Haven, USA Selective mentoring program for minority students interested in STEM at Yale in their freshman year. <b>Fundação Estudar Scholarship</b> – São Paulo, Brazil Merit-based scholarship awarded to 27 out of 11,000 applicants based on academic excellence and students' potential to lead and leave a positive legacy in Brazil. <b>25th International Young Physicists' Tournament (IYPT), Bronze Medal</b> – Germany IYPT is considered the Physics World Cup for high school students. Teams of 5 students selected in national competitions in each country work on open-ended problems and debate about them. <b>24th International Young Physicists' Tournament (IYPT), 15th place</b> – Iran IYPT is considered the Physics World Cup for high school students. Teams of 5 students selected in national competitions in each country work on open-ended problems and debate about them.	2021 2020 2019 2016 and 2015 2016 and 2015 2016 2014 2014 2013 2012 2011
<b>Skills</b>	<i>Programming:</i> <b>Matlab, Mathematica, Python, C/C++ and HTML.</b> <i>Languages:</i> <b>Portuguese</b> (native), <b>English</b> (fluent), <b>German</b> (intermediate) and <b>Spanish</b> (read).	
<b>Teaching, Mentoring and Outreach</b>	<b>Introductory Physics Recitations and Labs, TA</b> – Columbia University, New York, USA Responsible for teaching introductory physics recitations and labs to over 140 pre-medical and engineering undergrads over 2 years. Courses: UN1202, UN1401, UN1292, UN1291.	2018-2020

	<b>National Selection Tournament of US IYPT</b> , <i>Juror</i> – New Haven, USA	Spring 2018
	Judged selection of high school team to represent the US at the International Young Physicists' Tournament.	
	<b>New Haven Science Fair</b> , <i>Mentor</i> – New Haven, USA	Spring 2017
	Mentored a New Haven public school 9th grader on a thermodynamics project. She won 2nd place in the entire fair and an award for science communication.	
	<b>Yale College Dean's Office</b> , <i>STARS Peer Mentor</i> – New Haven, USA	2016 – 2017
	Worked as Peer Mentor for incoming minority students interested in pursuing STEM majors at Yale who participate in the Science, Technology and Research Scholars Program I.	
	<b>Yale Girls Science Investigations</b> , <i>Volunteer</i> – New Haven, USA	Fall 2016
	Volunteered to help GSI, which brings elementary school girls to Yale to do fun experiments for a day.	
	<b>Yale Office of International Students and Scholars</b> , <i>Peer Liaison</i> – New Haven, USA	2015 – 2016
	Worked as a Peer Liaison to help incoming international freshmen adjusting to the Yale environment.	
	<b>Yale Center for Language Studies</b> , <i>Portuguese Tutor</i> – New Haven, USA	Mar 2015 – Apr 2017
	Worked as a tutor for Yale students studying Portuguese language.	
	<b>Splash at Yale</b> , <i>Teacher</i> – New Haven, USA	Spring 2015
	Co-taught the course <i>The Physics of Interstellar</i> for high school students.	
	<b>Brazilian Student Council on Undergraduate Education</b> , <i>Mentor</i> – Brazil	2014 – 2015
	Mentored 3 Brazilian high school students applying to American colleges.	
	<b>Yale Department of Spanish and Portuguese</b> , <i>Portuguese Grader</i> – New Haven, USA	2013 – 2014
	Worked as a grader of homework assigned in Portuguese classes.	
<b>Policy and Lobbying</b>	<b>NAGPS Legislative Action Days (LAD)</b> , <i>Columbia Delegation Member</i>	Mar 2020
	I was a part of Columbia's delegation to NAGPS's LAD and met with HR and Senate staff about issues and bills that affect grad students (online because of COVID-19).	
	<b>Lobbying against ICE removal of SEVP exemption</b> , <i>Initiative Organizer</i>	Jul 2020
	After ICE removed the exemption permitting international students to maintain their status taking online courses, I led a group of physics students who met (virtually) with House Reps. and congressional staff.	
<b>Leadership Positions</b>	<b>SU(5) Peer Mentoring</b> , <i>Founding Member &amp; Mentor/Facilitator</i>	2020-Present
	SU(5) provides a network and a mentor to incoming astronomy and physics graduate students nationwide.	
	<b>Columbia Physics Grad Council</b> , <i>President &amp; Diversity Liaison</i> – New York, USA	2019 – Present
	Served as President (2020-2021) and as Climate and Diversity Liaison (2019-2020). Addressed students' quality of life and academic issues alongside the dept.'s chair and committees, and other student groups.	
	<b>Columbia Spectra</b> , <i>Graduate Coordinator</i> – New York, USA	2018 – 2020
	Formerly the Columbia Society for Women in Physics. I coordinated events targeting current and prospective grad students, and advised female and underrepresented undergrads in physics.	
	<b>Yale Physics Climate and Diversity Committee</b> , <i>Undergrad Rep.</i> – New Haven, USA	2015 – 2017
	Represented the interest of Yale physics undergrads with respect to the climate of the department.	
	<b>Yale Women in Physics</b> , <i>Co-President &amp; Co-Coordinator</i> – New Haven, USA	2014 – 2016
<b>Extra Coursework and Summer Schools</b>	Served as President (2015-2016) and as Conference Co-Coordinator (2014-2015). Responsible for organizing a national conference, panels and social events for the Yale physics community.	
	<b>Brazil Club at Yale</b> , <i>President &amp; Vice-President</i> – New Haven, USA	2014 – 2016
	Served as President (2015-2016) and Vice-President (2014-2015). Responsible for organizing social events, talks and meals for people interested in Brazil at Yale.	
	<b>Yale Admissions Office</b> , <i>Science Tour Guide</i> – New Haven, USA	Summer 2015
	Worked part-time as a tour guide of Yale's science facilities.	
	<b>George Washington University Nuclear Security Boot Camp</b> – Online	Jun 2020
	Selective week-long course on nuclear security taught by science/policy experts and policymakers.	
	<b>Dunlap Institute Introduction to Astronomical Instrumentation</b> – Toronto, Canada	Aug 2016
	Selective week-long theoretical/experimental summer school at the Dunlap Institute for Astronomy and Astrophysics at the University of Toronto for college seniors and graduate students.	
	<b>Course of General Astronomy</b> – Brazil	Nov 2011 – May 2012
	Course for the top 120 in the Brazilian Astronomy Olympiad competing to represent Brazil internationally.	
	<b>IV Advanced School of Nuclear Energy (EAEN)</b> – São Paulo, Brazil	Jul 2011
	Selective week-long school for high schoolers at the Institute for Nuclear Energy Research at USP.	

<b>Conferences and Presentations</b>	<b>EstroGênia: Meninas na Ciência</b> – Tecnologia Educacional (Grupo Positivo), Online, Mar. 2021, <i>Invited Panelist</i> , Panel: <i>How Schools Should Promote STEM Education</i> .	
	<b>I Congresso Nacional de Inovação e Popularização da Ciência</b> – Federal University of Minas Gerais (UFMG), Online, Oct. 2020, <i>Invited Panelist</i> , Panel: <i>Science, Innovation and Market after COVID-19</i> .	
	<b>235<sup>th</sup> American Astronomical Society Meeting</b> – Honolulu, HI, USA, Jan. 2020, <i>Poster Presentation</i> . B. Cruvinel Santiago, N. Melso, H. R. Ong, B. Smiley, M. Rosenthal, M. Murillo, S. Graber, and D. Schiminovich, <i>Circumgalactic H-alpha Spectrograph: Initial Results from the First Engineering Runs</i> .	
	<b>MIT Physics Exploration Day</b> – Cambridge, MA, USA, Apr. 2018, <i>Poster Presentation</i> . B. Cruvinel Santiago, and I. Phinney, <i>Overview of Advanced LIGO and future methods of noise reduction</i> .	
	<b>Scientista Symposium</b> – New York, NY, USA, Apr. 2017, <i>Poster Presentation</i> . B. Cruvinel Santiago, and D. DeMille, <i>Evaluating and Upgrading a Fast Compact Laser Shutter Prototype</i> .	
	<b>Pierson College Mellon Forum at Yale</b> – New Haven, CT, USA, Feb. 2017, <i>Oral Presentation</i> . B. Cruvinel Santiago, <i>Development of Hardware for Atomic Physics Experiments</i> .	
	<b>APS Conference for Undergraduate Women in Physics (CUWiP) at Yale</b> – New Haven, USA, CT, Jan. 2015, <i>Conference Co-Coordinator</i> .	
<b>Other Honors and Awards</b>	<b>Physics Olympiad of the State of São Paulo 2012 (OPF)</b> , <i>Bronze Medal</i> – Brazil	2012
	OPF is a state-level physics competition for São Paulo high school students.	
	<b>3rd Brazilian Linguistics Olympiad (OBL)</b> , <i>Honorable Mention</i> – Brazil	2012
	OBL is a national linguistics competition for Brazilian high school students.	
	<b>IYPT Brasil 2012</b> , <i>Silver Medal, Selected for national delegation</i> – Brazil	2012
	National competition that selects 5 high school students to go to represent Brazil at the IYPT.	
	<b>XV Brazilian Olympiad on Astronomy and Astronautics (OBA)</b> , <i>Gold Medal</i> – Brazil	2012
	OBA is a national astronomy competition for Brazilian middle and high school students.	
	<b>Regional Tournament of Exact Sciences (TEX)</b> , <i>1st place</i> – Santos, Brazil	2012
	TEX is a competition on physics, chemistry and math for students in the Baixada Santista region.	
	<b>IYPT Brasil 2011</b> , <i>Silver Medal, Selected for national delegation</i> – Brazil	2011
<b>Literary and Magazine Publications</b>	National competition that selects 5 high school students to go to represent Brazil at the IYPT.	
	<b>XIV Brazilian Olympiad on Astronomy and Astronautics (OBA)</b> , <i>Silver Medal</i> – Brazil	2011
	OBA is a national astronomy competition for Brazilian middle and high school students.	
	<b>Physics Olympiad of the State of São Paulo 2012 (OPF)</b> , <i>Honorable Mention</i> – Brazil	2010
	OPF is a state-level physics competition for São Paulo high school students.	
	<b>IYPT Brasil 2010</b> , <i>Bronze Medal</i> – Brazil	2010
	National competition that selects 5 high school students to go to represent Brazil at the IYPT.	
	<b>XII Brazilian Olympiad on Astronomy and Astronautics (OBA)</b> , <i>Silver Medal</i> – Brazil	2009
	OBA is a national astronomy competition for Brazilian middle and high school students.	
	<b>XI Brazilian Olympiad on Astronomy and Astronautics (OBA)</b> , <i>Silver Medal</i> – Brazil	2008
	OBA is a national astronomy competition for Brazilian middle and high school students.	
	B. Cruvinel Santiago, <i>A female Ph.D. student's cautionary tale and the need for peer mentorship</i> , Women in Astronomy, Summer 2020.	
	B. Cruvinel Santiago, <i>Undergraduate Profile Katie Melbourne (SY '19): From Yale to NASA</i> , Yale Scientific Magazine, Spring 2017.	
	B. Cruvinel Santiago, <i>Caro fantasma do preconceito inconsciente... (Dear ghost of implicit bias...)</i> , Accent (The Undergraduate Multilingual Magazine at Yale), Fall 2016.	
	B. Cruvinel Santiago, <i>Em trânsito: navegando entre dois mundos (In Transit: Navigating Between Two Worlds)</i> , Accent (The Undergraduate Multilingual Magazine at Yale), Spring 2016.	
	B. Cruvinel Santiago, <i>Agressividade infundada: o novo vício do eleitor brasileiro (Non-sense aggression: the new addiction of the Brazilian voter)</i> , Accent (The Undergraduate Multilingual Magazine at Yale), Fall 2014.	
	B. Cruvinel Santiago, <i>O Brasil e o império da ciência (Brazil and the science empire)</i> , Accent (The Undergraduate Multilingual Magazine at Yale), Spring 2014.	