ANA ASENJO-GARCIA

Personal Information

Position (since July 2023):	**Associate Professor of Physics at Columbia University**
Address:	704 Pupin Hall MC 5255, New York, NY 10027
Citizenship:	Spanish, permanent resident of the United States
web:	asenjogarcia.phys.columbia.edu
email:	ana.asenjo@columbia.edu

Research Interests

Theoretical Physics: Quantum optics, open quantum systems, many-body physics.

Previous academic positions

2019-2023	Assistant Professor of Physics at Columbia University
2015-2018	IQIM and Marie Curie Postdoctoral Fellow
2015-2018	California Institute of Technology (Caltech), Institute for Quantum Information and Matter
2018	The Institute of Photonic Sciences (ICFO), Marie Curie return phase
2014-2015	Postdoctoral Scholar, ICFO

Education

2010-2014	Ph.D. in Physics, Universidad Complutense de Madrid
2009-2010	MSc in Theoretical Physics, Universidad Complutense de Madrid
2004-2009	Extended BSc in Physics (5 years), Universidad Complutense de Madrid

Fellowships and Awards

2022	Early Career Scientist Prize in AMO Physics, International Union of Pure and Applied Physics
2021	Packard Fellowship, David and Lucile Packard Foundation
2021	AFOSR Young Investigator Program, Air Force Office of Scientific Research
2021	NSF CAREER Award, National Science Foundation
2021	Sloan Fellowship, Alfred P. Sloan Foundation
2019, 2023	Lenfest Junior Faculty Development Grant, Columbia University
2016 – 2018	Marie Curie Global Postdoctoral Fellowship, European Commission
2015 – 2017	IQIM Postdoctoral Fellowship, Institute of Quantum Information and Matter, Caltech
2010 – 2014	Ph.D. Fellowship (FPU), Spanish Department of Education

Students and postdoctoral associates

Current

Bruno Casenave, undergraduate student, since September 2026.

Dr. Clayton Peacock, postdoc, since September 2026.

Dr. Iñaki Garcia Elcano, postdoc, since October 2024.

Edgar Guardiola Navarrete, PhD student (La Caixa Fellow), since September 2024.

Eric Sierra, PhD student, since September 2022.

Joseph Lee, PhD student (NSF GRFP), since September 2021.

Former

Dr. Cosimo Rusconi, Marie Curie Postdoctoral Fellow (2023 - 2026), now Senior Quantum Scientist at QuEra.

Dr. Silvia Cardenas-Lopez, PhD student (2020-2026), now postdoc at Université de Sherbrooke.

Pau Blancafort, undergraduate student (2025), now master student at the University of Barcelona.

Dr. Stuart J. Masson, postdoc (2019 - 2024), now Assistant Professor at the University of South Florida.

Avishi Poddar, undergraduate student (2023 - 2024), now graduate student at Harvard.

Dr. Ricardo Gutierrez-Jauregui, postdoc (2019 - 2023), now Assistant Professor at UNAM, Mexico.

Zoe Zager, undergraduate student (2021-2022), now graduate student at Princeton.

Jireh Garcia, Bridge to PhD student (2020-2022), now graduate student at the University of Chicago.

Dr. Bihui Zhu, postdoc (2020 - 2021), now Assistant Professor at the University of Oklahoma.

Supantho Rakshit, undergraduate student (2020-2021), now graduate student at Princeton.

Publications and preprints

google scholar

Key publications denoted by ☆.

Optical depth dictates universal bounds on many-body decay in atomic ensembles
C. C. Rusconi, E. Sierra, W.-K. Mok, A. Poddar, S. B Jäger, and A. Asenjo-Garcia
Physical Review Letters 137, 143603 (2026).

Polaron-Polaritons in Subwavelength Arrays of Trapped Atoms
K. K. Nielsen, L. Wangler, D. Castells-Graells, J. I. Cirac, A. Asenjo-Garcia, D. Malz, and C. C. Rusconi
arXiv:2601.21062 (2026).

☆ **Universal scaling laws for correlated decay in many-body quantum systems**
W.-K. Mok, A. Poddar, E. Sierra, C. C. Rusconi, J. Preskill, and A. Asenjo-Garcia
Nature Physics, in press (2026).

Exact Many-body Quantum Dynamics in One-Dimensional Baths via "Superspins"
J. T. Lee, S. Cardenas-Lopez, S. J. Masson, R. Trivedi, and A. Asenjo-Garcia
Physical Review A 113, L061701 (2026).

Theory of quantum-enhanced interferometry with general Markovian light sources
E. Abbasgholinejad, D. Malz, A. Asenjo-Garcia, and R. Trivedi
PRX Quantum 7, 033069 (2026).

Emergent spin order and steady-state superradiance in one-dimensional baths
S. Cardenas-Lopez, E. Guardiola-Navarrete, and A. Asenjo-Garcia
arXiv:2511.10638 (2025).

Phase space methods for many-body quantum optics
E. Guardiola-Navarrete, S. Cardenas-Lopez, and A. Asenjo-Garcia
Advances in Atomic, Molecular, and Optical Physics 74, 87 (2025).

Deterministic generation of photonic entangled states using decoherence-free subspaces
O. Rubies-Bigorda, S. J. Masson, S. F. Yelin, and A. Asenjo-Garcia
Physical Review Letters 134, 213603 (2025).

Optomechanical self-organization in a mesoscopic atom array
J. Ho, Y.-H. Lu, T. Xiang, C. C. Rusconi, S. J. Masson, A. Asenjo-Garcia, Z. Yan, and D. M. Stamper-Kurn
Nature Physics 21, 1071 (2025).

Ground-state selection via many-body superradiant decay
W.-K. Mok, S. Masson, D. M. Stamper-Kurn, T. Zelevinsky, and A. Asenjo-Garcia
Physical Review Research 7, L022015 (2025).

Collectively enhanced ground-state cooling in subwavelength atomic arrays
O. Rubies-Bigorda, R. Holzinger, A. Asenjo-Garcia, O. Romero-Isart, H. Ritsch, S. Ostermann, C. Gonzalez-Ballestero, S. F. Yelin, and C. C. Rusconi
Physical Review A 112, 023714 (2025).

Polaritonic Quantum Matter
D. N. Basov, A. Asenjo-Garcia, P. J. Schuck, X. Zhu, A. Rubio, A. Cavalleri, M. Delor, M. M. Fogler, and M. D. Liu
Nanophotonics 14, 3723 (2025).

N-way frequency beamsplitter for quantum photonics
R. Oliver, M. Blau, C. Joshi, X. Ji, R. Gutierrez-Jauregui, A. Asenjo-Garcia, M. Lipson, and A. L. Gaeta
Physical Review Research 7, 023108 (2025).

Influence of discontinuities on photonic waveguides
G. R. Bhatt, U. D. Dave, J. Rocha-Rodrigues, M. Zadka, I. Datta, A. Asenjo-Garcia, and M. Lipson
Optics Letters 49, 3918 (2024).

Dicke superradiance in ordered arrays of multilevel atoms
S. J. Masson, J. Covey, S. Will, and A. Asenjo-Garcia
PRX Quantum 5, 010344 (2024).

State-insensitive wavelengths for light shifts and photon scattering from Zeeman states
S. J. Masson, Z. Yan, J. Ho, Y.-H. Lu, D. M. Stamper-Kurn, and A. Asenjo-Garcia
Physical Review A 109, 063105 (2024).

Super-radiant and sub-radiant cavity scattering by atom arrays
Z. Yan, J. Ho, Y.-H. Lu, S. J. Masson, A. Asenjo-Garcia, and D. M. Stamper-Kurn
Physical Review Letters 131, 253603 (2023).

Dynamical beats of short pulses in waveguide QED
D. Su, Y. Joy, S. Cardenas-Lopez, A. Asenjo-Garcia, P. Solano, L. A. Orozco, and Y. Zhao
Physical Review Research 5, L042041 (2023).

All-dielectric scale invariant waveguide
J. R. Rodrigues , U. Dave , A. Mohanty , X. Ji , I. Datta , E. Shim , R. Gutierrez-Jauregui, V. R. Almeida, A. Asenjo-Garcia, and M. Lipson
Nature Communications 14, 6675 (2023).

☆ **Many-body superradiance and dynamical symmetry breaking in waveguide QED**
S. Cardenas-Lopez, S. J. Masson, Z. Zager, A. Asenjo-Garcia
Physical Review Letters 131, 033605 (2023).

Metasurface holographic optical traps for ultracold atoms
X. Huang, W. Yuan, A. Holman, M. Kwon, S. J. Masson, R. Gutierrez-Jauregui, A. Asenjo-Garcia, S. Will, and N. Yu
Progress in Quantum Electronics 89, 100470 (2023).

Dicke superradiance requires interactions beyond nearest-neighbors
W.-K. Mok, A. Asenjo-Garcia, T. C. Sum, and L.-C. Kwek
Physical Review Letters 130, 213605 (2023).

Dissipative stabilization of dark quantum dimers via squeezed vacuum
R. Gutierrez-Jauregui, A. Asenjo-Garcia, and G. Agarwal
Physical Review Research 5, 013127 (2023).

Optical precursors in waveguide quantum electrodynamics
S. Cardenas-Lopez, P. Solano, L. A. Orozco, and A. Asenjo-Garcia
Physical Review Research 5, 013133 (2023).

Control of localized single- and many-body dark states in waveguide QED
R. Holzinger, R. Gutierrez-Jauregui, T. Hönigl-Decrinis, G. Kirchmair, A. Asenjo-Garcia, and H. Ritsch
Physical Review Letters 129, 253601 (2022).

Darkness tamed with superconducting qubits
S. J. Masson, and A. Asenjo-Garcia
Nature Physics (News and Views) 18, 490 (2022).

Directional transport along an atomic chain
R. Gutierrez-Jauregui, and A. Asenjo-Garcia
Physical Review A 105, 043703 (2022).

Dicke superradiance in ordered lattices: dimensionality matters
E. Sierra, S. J. Masson and A. Asenjo-Garcia
Physical Review Research 4, 023207 (2022).

☆ **Universality of Dicke superradiance in arrays of quantum emitters**
S. J. Masson and A. Asenjo-Garcia
Nature Communications 13, 2285 (2022).

Coherent control in atomic chains: to trap and release a traveling excitation
R. Gutierrez-Jauregui, and A. Asenjo-Garcia
Physical Review Research 4, 013080 (2022).

Finding light in dark atomic clouds
A. Asenjo-Garcia
Physics 14, 69 (2021).

Many-body localization in waveguide QED
N. Fayard, L. Henriet, A. Asenjo-Garcia, and D. E. Chang
Physical Review Research 3, 033233 (2021).

Polariton panorama
D. N. Basov, A. Asenjo-Garcia, J. P. Schuck, X. Zhu, and A. Rubio
Nanophotonics 10, 549 (2021).

Enhanced Tunable Second Harmonic Generation from Twistable Interfaces and Vertical Superlattices in Boron Nitride Homostructures
K. Yao, N. R. Finney, J. Zhang, S. L. Moore, L. Xian, N. Tancogne-Dejean, F. Liu, J. Ardelean, X. Xu, D. Halbertal, K. Watanabe, T. Taniguchi, H. Ochoa, A. Asenjo-Garcia, X. Zhu, D. N. Basov, A. Rubio, C. R. Dean, J. Hone, P. J. Schuck
Science Advances 7, eabe8691 (2021).

Many-body signatures of collective decay in atomic chains
S. J. Masson, I. Ferrier-Barbut, L. A. Orozco, A. Browaeys, and A. Asenjo-Garcia
Physical Review Letters 125, 263601(2020).

Flat bands and chiral optical response of moiré insulators
H. Ochoa and A. Asenjo-Garcia
Physical Review Letters 125, 037402 (2020).

Atomic-Waveguide Quantum Electrodynamics
S. J. Masson and A. Asenjo-Garcia
Physical Review Research 2, 043213 (2020).

Optical waveguiding by atomic entanglement in multilevel atom arrays
A. Asenjo-Garcia, H. J. Kimble, and D. E. Chang
Proceedings of the National Academy of Sciences 116, 25503 (2019).

Cavity quantum electrodynamics with atom-like mirrors
M. Mirhosseini, E. Kim, X. Zhang, A. Sipahigil, P. B. Dieterle, A. J. Keller, A. Asenjo-Garcia, D. E. Chang, and O. J. Painter
Nature 569, 692 (2019).

Subradiant states of quantum bits coupled to a one-dimensional waveguide
L. Henriet, A. Albrecht, A. Asenjo-Garcia, P. Dieterle, O. J. Painter, and D. E. Chang,
New Journal of Physics 21, 025003 (2019).

Population mixing due to dipole-dipole interactions in a 1D array of multilevel atoms
E. Munro, A. Asenjo-Garcia, Y. Lin, L. C. Kwek, C. A. Regal, and D. E. Chang,
Physical Review A 98, 033815 (2018).

Optimization of photon storage fidelity in ordered atomic arrays
M. T. Manzoni, M. Moreno-Cardoner, A. Asenjo-Garcia, J. V. Porto, A. V. Gorshkov, and D. E. Chang,
New Journal of Physics 20, 083048 (2018).

☆ **Exponential improvement in photon storage fidelities using subradiance and selective radiance in atomic arrays**
A. Asenjo-Garcia, M. Moreno-Cardoner, A. Albrecht, H. J. Kimble, and D. E. Chang,
Physical Review X 7, 031024 (2017).

Atom-light interactions in quasi-one-dimensional systems: a Green's function perspective
A. Asenjo-Garcia, J. D. Hood, D. E. Chang, and H. J. Kimble,
Physical Review A 95, 033818 (2017).

Atom-atom interactions around the band edge of a photonic crystal
J. D. Hood, A. Goban, A. Asenjo-Garcia, M. Lu, S.-P. Yu, D. E. Chang, and H. J. Kimble,
Proceedings of the National Academy of Sciences 113, 10507 (2016).

Hot-electron dynamics and thermalization in small metallic nanoparticles
J. R. M. Saavedra, A. Asenjo-Garcia, and F. J. García de Abajo,
ACS Photonics 3, 1637 (2016).

Dichroism in the interaction between vortex electron beams, plasmons, and molecules
A. Asenjo-Garcia, and F. J. García de Abajo,
Physical Review Letters 113, 066102 (2014).

3D plasmonic chiral colloids
X. Shen, P. Zhan, A. Kuzyk, Q. Liu, A. Asenjo-Garcia, H. Zhang, F. J. García de Abajo, A. Govorov, B. Ding, and N. Liu,
Nanoscale 6, 2077-2081 (2014).

Plasmon electron energy gain spectroscopy
A. Asenjo-Garcia, and F. J. García de Abajo,
New Journal of Physics 15, 103021 (2013).

Three-dimensional plasmonic chiral tetramers assembled by DNA origami
X. Shen, A. Asenjo-Garcia, Q. Liu, Q. Jiang, F. J. García de Abajo, N. Liu, and B. Ding,
Nano Letters 13, 2128-2133 (2013).

Alternating plasmonic nanoparticle heterochains made by polymerase chain reaction and their optical properties
Y. Zhao, L. Xu, L. M. Liz-Marzán, H. Kuang, W. Ma, A. Asenjo-Garcia, F. J. García de Abajo, N. A. Kotov, L. Wang, and C. Xu,
J. Phys. Chem. Lett. 4, 641 (2013).

Magnetic polarization in the optical absorption of metallic nanoparticles
A. Asenjo-Garcia, A. Manjavacas, V. Myroshnychenko, and F. J. García de Abajo,
Optics Express 20, 28142 (2012).

Stimulated light emission and inelastic scattering by a classical linear system of rotating particles
A. Asenjo-Garcia, A. Manjavacas, and F. J. García de Abajo,
Physical Review Letters 106, 213601 (2011).

Multiphoton absorption and emission by interaction of swift electrons with evanescent light fields
F. J. García de Abajo, A. Asenjo-Garcia, and M. Kociak,
Nano Letters 10, 1859-1863 (2010).

Rotating beams in isotropic optical system
T. Alieva, E. Abramochkin, A. Asenjo-Garcia, and E. Razueva,
Optics Express 18, 3568 (2010).

Lectures, talks, seminars, and colloquia

Plenary, named, and public Lectures

Sept 2024 The Pontifical Academy Biennial Plenary Conference, Vatican City
July 2022 International Conference in Atomic Physics (ICAP), Toronto, Canada
Dec 2021 Physics Public Lecture, Aspen Center for Physics, CO
April 2021 Frederica Darema Lecture Series, UC Davis, CA
Nov 2019 Science-on-Hudson Public Lecture, Columbia University, NY

Summer schools and lecture series

June 2024 Workshop-School on Quantum Spinoptics, Mainz, Germany
July 2021 Boulder School for Condensed Matter and Materials Physics, Boulder, CO
Oct 2019 Interaction of light and cold atoms, Les Houches School of Physics, France

Invited talks, seminars, and colloquia

Sep 2026 Physics Colloquium, **University of Rochester, NY**
June 2026 DAMOP, **Providence, RI**
April 2026 PCTS Quantum Information/Simulation and Open Systems, **Princeton University**
March 2026 APS Global Summit (March Meeting), **Denver, CO**
Feb 2026 Workshop on Long-Range Interactions in Quantum Systems, **Les Houches, France**
Nov 2025 Physics Colloquium, **Caltech, CA**
Oct 2025 OSC Colloquium, **University of Arizona, AZ**
July 2025 Quantum optics and quantum materials conference, **Flatiron Institute, NY**
July 2025 Physics Colloquium, **Kavli Institute for Theoretical Physics, CA**
Feb 2025 Physics Colloquium, **Yale University, CT**
Dec 2024 NISQ seminar, **Google Quantum AI, CA**
Nov 2024 Physics Colloquium, **Columbia University, NY**
Oct 2024 ITAMP workshop, **Harvard University, MA**
Oct 2024 Chemistry Colloquium, Student Invited Lecture Series, **Princeton University, NJ**
Sept 2024 International Conference on Quantum Optics and Quantum Information, **Innsbruck, Austria**
June 2024 Seminar, **University of Kaiserslautern-Landau, Germany**
June 2024 DAMOP, **Fort Worth, TX**
May 2024 Quantum Matter 2024, **San Sebastian, Spain**
April 2024 INTRIQ meeting, **Montreal, Canada**
April 2024 Quantum Science & Technology, **Columbia University, NY**
Jan 2024 Physics of Quantum Electronics (PQE), **Snowbird, Utah**
Oct 2023 CM/AMO Seminar, **University of Michigan, MI**
Oct 2023 Physics Colloquium, **Universidad Autonoma de San Luis Potosi, Mexico**
Aug 2023 Physical Chemistry Colloquium, **Indiana University at Bloomington, IN**
July 2023 DIPC Seminar, **Donostia International Physics Center, Spain**
June 2023 IQOQI Quantum Seminar, **University of Innsbruck, Austria**
June 2023 Seminar, **Max Planck Institute for Quantum Optics, Germany**
June 2023 CLEO Europe, **Munich, Germany**
June 2023 Gordon conference in atomic physics, **Newport, RI**
May 2023 Workshop on waveguide QED, **Erice, Italy**
Feb 2023 Princeton Quantum Colloquium, **Princeton University, NJ**
Jan 2023 Physics Colloquium, **University of Hamburg, Germany**
Dec 2022 CUbit seminar, **University of Colorado at Boulder and JILA, CO**
Nov 2022 CQuIC seminar, **University of New Mexico, NM**
Nov 2022 Condensed and Living Matter Seminar, **University of Pennsylvania, PA**
Nov 2022 AMO seminar, **Rice University, TX**
Oct 2022 DAALI workshop, **ICFO, Spain**
Sep 2022 Q-FARM Seminar, **Stanford University, CA**
Aug 2022 Harnessing light-matter interactions in quantum materials, **Flatiron Institute, NY**

July 2022 Physics Colloquium, **Humboldt University of Berlin, Germany**
June 2022 C2QA Colloquium, **Brookhaven National Laboratory, NY**
June 2022 DAMOP, **Orlando, FL**
May 2022 Seminar, **University of Oulu, Finland**
May 2022 JQI Seminar, **Joint Quantum Institute, University of Maryland, MD**
April 2022 AMO Seminar, **University of California Berkeley, CA**
April 2022 PME Quantum Seminar Series, **University of Chicago, IL**
Mar 2022 Physics Seminar, **University of Illinois at Urbana-Champaign, IL**
Feb 2022 CUA Seminar, **MIT-Harvard Center for Ultracold Atoms, MA**
Feb 2022 Physical Seminar, **Purdue University, IN**
Jan 2022 Quantum Cooperativity of Light and Matter, **Saarland University, Germany**
Nov 2021 IQUIST seminar, **University of Illinois at Urbana-Champaign, IL**
Nov 2021 Seminar in Theoretical Physics, **University of Massachusetts Lowell, MA**
Oct 2021 Physics Colloquium, **Columbia University, NY**
Oct 2021 Physics Colloquium, **Penn State, PA**
Oct 2021 Seminar, **Macquarie University, Sydney, Australia**
Sept 2021 Physics Colloquium, **University of Sao Paulo, Brazil**
June 2021 Workshop on waveguide QED, **Mazara del Vallo, Italy**
April 2021 Center for Quantum Research and Technology Seminar, **University of Oklahoma**
Jan 2021 Fall and Winter Seminar Series, **Queen's University, Canada**
Dec 2020 ITAMP seminar, **Harvard University, MA**
Dec 2020 Seminario de Tecnologias Cuánticas, **Madrid, Spain**
Nov 2020 Colloquium of the Quantum Institute, **University of Sherbrooke, Canada**
Nov 2020 Ginzton seminar, **Stanford, CA**
Oct 2020 Guest virtual seminar, **Xerox PARC, CA**
Aug 2020 Quantum Huddle, **Harvard University, MA**
Aug 2020 Virtual AMO Seminar (VAMOS)
June 2020 DAMOP Meeting of the American Physical Society
April 2020 AMO seminar, **Stony Brook University, NY**
Nov 2019 Center for Nonequilibrium Quantum Phenomena Workshop, **Flatiron Institute, NY**
Nov 2019 Physics Colloquium, **Miami University, OH**
Aug 2019 8th Conference for Quantum Information and Quantum Control, **Toronto, Canada**
Aug 2019 Rochester Conference on Coherence and Quantum Optics, **Rochester, NY**
May 2019 Physics Colloquium, **Queens College New York (CUNY), NY**
April 2019 Condensed Matter Seminar, **Rutgers University, NJ**
Feb 2019 Physics Colloquium, **City College New York , NY**
Jan 2019 Columbia-Flatiron-Max Planck Institute kick-off meeting, **Flatiron Institute, NY**
Jan 2019 Winter Colloquium on the Physics of Quantum Electronics (PQE), **Snowbird, UT**
Dec 2018 Nevis Retreat, **Columbia University, NY**

Nov 2018	Frontiers of Condensed Matter Physics, **Columbia University, NY**
May 2018	Central European Workshop on Quantum Optics, **Mallorca, Spain**
Feb 2018	Nanoscale Quantum Optics Workshop, **Prague, Czech Republic**
Feb 2018	IQC Seminar, **University of Waterloo, Canada**
Feb 2018	Condensed matter and AMO seminar, **Columbia University, NY**
Feb 2018	Optics Colloquium, **University of Rochester, NY**
Feb 2018	Special Physics Seminar, **McGill University, Canada**
Dec 2017	IQOQI Seminar, **University of Innsbruck, Austria**
Oct 2017	Many-body cavity QED, **ITAMP-Harvard, MA**
Oct 2017	Quantum Innovators, **IQC, Waterloo, Canada**
May 2017	Light-Matter Interactions in Low Dimensions, **ICFO, Barcelona, Spain**
April 2017	CQuIC Seminar, **University of New Mexico, NM**
April 2017	IQIM Seminar, **Caltech, CA**
March 2017	JQI Special Seminar, **University of Maryland, MD**
May 2016	IQIM Retreat, **Caltech, CA**
Aug 2014	IQIM Seminar, **Caltech, CA**
Aug 2011	SPIE Optics+Photonics, **San Diego, CA**

Mentoring, Outreach and Diversity Initiatives

Fall 2020 to date | **Founder** of Coding Club at Democracy Prep Harlem High School.

This after school tutoring and outreach program serves underrepresented students from a high school in Harlem, and it is run by graduate students in the department. The fall season of 2020 consisted of informal physics talks. Starting spring 2021, the program has become a coding bootcamp using Snap and Python. In the fall of 2022, it received a Diversity Initiative Grant from the Arts & Sciences Graduate Council. See a Columbia highlight here.

Jan 2023 | **Plenary speaker** at the APS Conference for Undergraduate Women in Physics (CUWiP) at Cornell University and Ithaca College.

May 2020 | **Speaker** for the Bridge Program at Columbia.

Shared career advice with students from underrepresented groups who want to pursue Ph.D. studies in STEM disciplines.

Teaching

Spring 2026, 2024, 2022, 2021	Quantum Optics: Atoms and Photons, GR6065 Graduate-level class
Fall 2024	Seminar in Contemporary Physics and Astronomy, ASPHUN1900 First year class for physics and astronomy majors
Spring 2023	Quantum Mechanics II, GU4022 Undergraduate-level class
Fall 2019-2021	Statistical Mechanics, GR6036 Graduate-level class
Spring 2019	General Physics I, UN1201 First year class for pre-med students
Spring 2019	Graduate student seminar, PHYSG6905 Class for first year graduate students in physics

Service

Professional Society Service

Member-at-large of the APS DAMOP executive committee, since 2026.

Scientific committee member of DAMOP at the March Meeting, 2022-2025.

Conference and Program Organization

Co-organizer, KITP program "Many-body Quantum Optics", Kavli Institute for Theoretical Physics, UC Santa Barbara, October-December 2024.

Co-organizer, session "Fundamental Science: Quantum Optics of Atoms, Molecules and Solids", CLEO 2021-2023.

Scientific committee member, "Quantum Information in Spain (ICE)", May 2021, and "International Conference on Quantum Communication (IQCOM2021)", October 2021 in Paris.

Co-organizer, Collective phenomena in driven quantum systems workshop, Mainz (Germany), July 10-13, 2018.

Peer review

Journals: Nature, Science, Nature Physics, Nature Communications, Science Advances, Proceedings of the National Academy of Sciences (PNAS), Physical Review Letters, Physical Review X, Physical Review A, among others.

Funding agencies and foundations: NSF (AMO-Theory and QIS programs), DOE, ARO, the W. M. Keck Foundation, and the Gordon and Betty Moore Foundation.

Departmental and University Service (Columbia)

AMO Faculty Search Committee; Packard Fellowship internal evaluation; Rabi Scholar selection; graduate admissions and qualifying exam committees, among others.

Last updated October 7, 2026.