Claudia Ojeda-Aristizabal

Professor
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California State University Long Beach
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Employment

Professor (2026-present)
California State University, Long Beach. Department of Physics and Astronomy.

Associate Professor (2021-2026)
California State University, Long Beach. Department of Physics and Astronomy.

Assistant Professor (2015-2021)
California State University, Long Beach. Department of Physics and Astronomy.

Postdoctoral scholar (2012-2015)
University of California, Berkeley. Department of Physics
Alex Zettl's research group

Postdoctoral scholar (2010-2012)
University of Maryland, College Park. Department of Physics and Astronomy
Michael Fuhrer's research group

Education

PhD Experimental Condensed Matter Physics (2010)
Laboratoire de Physique des Solides,
Université Paris-Saclay France.
PhD thesis: "Quantum transport in graphene". Advisors: Hélène Bouchiat, Sophie Guéron, Meydi Ferrier.

Master in Condensed Matter Physics (2007)
École Normale Supérieure, Paris France.
Master thesis: "Design and fabrication of a resonator for the measurement of a superconducting quantum bit". Advisors: Patrice Bertet, Denis Vion, CEA Saclay

B. Sc. Physics (2004)
Universidad de los Andes, Bogotá Colombia.
Research work: "Solitons and non linear stochastic differential equations". Advisors: Alain Bérard, Yves Grandati. Laboratoire de physique moléculaire et des collisions, Metz France,
"Stochastic decoherence of a qubit". Advisor: Luis Quiroga. Universidad de Los Andes, Bogota Colombia.

Languages

- Spanish (first language), English (fluent), French (fluent), Italian (conversational)

Honors

- Recipient of the 2025-2026 CSULB Distinguished Faculty Scholarly and Creative Achievement Award.
- Selected as the CSULB nominee for the 2023 Wang Family Excellence Award in Outstanding Faculty Scholarship across California State University.
- Highlighted in CSULB 2022 and 2023 Quest magazine.
- CNRS (French fundamental science agency) Fellowship for graduate students (2009-2010)
- European Marie Curie Fellowship for Early Stage Research Training (2007-2009)
- Scholarship for new international graduate students, Université Paris Saclay (2006-2007) (10 scholarships awarded university-wide).

Funding

- DOE Basic Energy Sciences, Experiemental Condensed Matter Physics, "Topology and molecular arrangement in low-dimensional magnetic materials", Award number DE-SC0018154, **Principal investigator $1,164k** (2017-2029).
- NSF, Division of Materials Research,"MRI: Acquisition of an Atomic Force Microscope for Materials Science Research and Student Training", Award number 2018653, **co-PI $336k** (2020-2022)
- NSF, Division of Materials Research:"PREM Cal State Univ. Long Beach and Ohio State University Partnership for Education and Research in Hard and Soft Materials, Award number 2122199, **Senior investigator $800k** (2021-2024)
- NSF, Division of Materials Research,"PREM: Cal. State Univ. Long Beach and Ohio State University Partnership for Education and Research in topological Materials", Award number 2425133, **Senior investigator $4,183k** (2024-2030).

Publications

1. Hai-Lan Luo, Weitang Li, Luca Moreschini, Jonathan Denlinger, Zhigang Shuai, Claudia Ojeda-Aristizabal and Alessandra Lanzara , "Layer-Controlled Intermolecular Coupling and Many-Body Effects in C60 Films" **Nano Lett. 26 (37), 12259 (2026).**
2. Claudia Ojeda-Aristizabal, Xiaohu Zheng, Changsong Xu, Zohar Nussinov, Yukitoshi Motome, Arnab Banerjee, Adam W. Tsen, Michael Knap, Rui-Rui Du, Gajadhar Joshi, Andy Mounce, Youngwook Kim, Benjamin M. Hunt, Dmitry Shcherbakov, Boyi Zhou, Ran Jing, Mengkun Liu, Hui Zhao, Bolin Liao, Martin Claassen, Onur Erten, Yong P. Chen and Erik A. Henriksen "Lessons from αRuCl$_3$ for pursuing quantum spin liquid physics in atomically thin Materials" **Invited Topical Review, Journal of Physics: Condensed Matter 38, 263001 (2026)**.
3. Anise Mansour, Deanna Diaz, Movindu Kawshan Dissanayake, Erin Henkhaus, Jungyoun Cho, Vinh Tran, Francisco Ramirez, Eric Corona -Oceguera, Joshua Luna, Kenta Kodama, Yueyun Chen, Ho Chan, Jacob Weber, Blake Koford, Patrick Barfield, Maya Martinez, Kenji Watanabe, Takashi Taniguchi, B. C. Regan, Matthew Mecklenburg, Thomas Gredig and Claudia Ojeda-Aristizabal "Modification of the scattering mechanisms in bilayer graphene in proximity to a molecular thin film probed in the mesoscopic regime" **2D Materials 13 021001 (2026)**
4. Claudia Ojeda-Aristizabal "Gap-opening time periodic perturbations" **Nature Physics (2025)**
5. Ivan Pelayo, Derek Bergner, Archibald J. Williams, Jiayuwen Qi, Mahfuzun Nabi, Warren L. B. Huey, Luca Moreschini, Ziling Deng, Jonathan Denlinger, Alessandra Lanzara, Wolfgang Windl, Joshua Goldberger, Claudia Ojeda-Aristizabal "Three-dimensional dispersion in the type-II Dirac semimetals PtTe2 and PdTe2 revealed through circular dichroism in angle-resolved photoemission spectroscopy" **Phys. Rev. B 110, 195429 (2024)**.
6. Patrick Barfield, Vinh Tran, Vikram Nagarajan, Maya Martinez, Amirari Diego, Derek Bergner, Alessandra Lanzara, James G. Analytis and Claudia Ojeda-Aristizabal "Electronic transport mechanisms in a thin crystal of the Kitaev candidate α-RuCl$_3$ probed through guarded high impedance measurements" **Appl. Phys. Lett. 122, 243102 (2023).**
7. Ping Ai, Luca Moreschini, Ryo Mori, Drew W. Latzke, Jonathan D. Denlinger, Alex Zettl, Claudia Ojeda-Aristizabal and Alessandra Lanzara, "Linearly dispersive bands at the onset of correlations in

K_xC_{60} films" **Physical Review Research 5, L022042 (Letter) (2023).**

8. Derek Bergner, Tai Kong, Ping Ai, Daniel Eilbott, Claudia Fatuzzo, Samuel Ciocys, Nicholas Dale, Conrad Stansbury, Drew Latzke, Everardo Molina, Ryan Reno, Robert J. Cava, Alessandra Lanzara and Claudia Ojeda-Aristizabal, "Polarization dependent photoemission as a probe of the magnetic ground state in the layered ferromagnet VI3" **Appl. Phys. Lett. 121, 183104 (2022)**.
9. Paul Anderson, Yifan Huang, Sinisa Coh, Yuanjun Fan, Sara Qubbaj, Qin Zhou and Claudia Ojeda-Aristizabal, "Signature of multilayer graphene strain-controlled domain walls in quantum Hall effect" **Phys. Rev. B 105, L081408 (2022) (letter)**.
10. Josue Rodriguez, Gilbert Lopez, Francisco Ramirez, Nicholas P. Breznay, Robert Kealhoffer, Vikram Nagarajan, Drew Latzke, Samantha Wilson, Naomy Marrufo, Peter Santiago, Jared Lara, Amirari Diego, Everardo Molina, David Rosser, Hadi Tavassol, Alessandra Lanzara, James Analytis and Claudia Ojeda-Aristizabal "Competition between magnetic order and charge localization in Na_2IrO_3 thin crystals devices" **Phys. Rev. B 101, 235415 (2020)**.
11. Drew Latzke* , Claudia Ojeda-Aristizabal*, Jonathan Denlinger, Ryan Reno, Alex Zettl and Alessandra Lanzara. **ACS Nano 13(11), 12710 (2019)**.
12. Drew Latzke* , Claudia Ojeda-Aristizabal*, Sinead M. Griffin, Jonathan Denlinger, Jeffrey B. Neaton, Alex Zettl and Alessandra Lanzara. "Observation of highly dispersive bands in pure thin film C_{60}" **Phys. Rev B 99, 045425 (2019)**.
13. C. Ojeda-Aristizabal, E. J. G. Santos, S. Onishi, Aiming Yan, H. Rasool, S. Kahn, Yichuan Lv, D. Latzke, J. Velasco Jr., M. Crommie, M. Sorensen, K. Gotlieb, Chiu-Yun Li, K. Watanabe, T. Taniguchi, A. Lanzara and A. Zettl, "Molecular arrangement and charge transfer in C_{60}/graphene heterostructures" **ACS Nano 11, 4686 (2017)**.
14. Hamid Reza Barzegar, Aiming Yan, Sinisa Coh, Eduardo Gracia-Espino, Claudia Ojeda-Aristizabal, Gabriel Dunn, Marvin L. Cohen, Steven G. Louie, Thomas Wagberg and Alex Zettl "Spontaneous twisting of a collapsed carbon nanotube" **Nano Res. (2017). doi:10.1007/s12274-016-1380-7**
15. Miguel M. Ugeda, Aaron J. Bradley, Yi Zhang, Seita Onishi, Yi Chen, Wei Ruan, Claudia Ojeda-Aristizabal, Hyejin Ryu, Mark T. Edmonds, Hsin-Zon Tsai, Alexander Riss, Sung-Kwan Mo, Dunghai Lee, Alex Zettl, Zahid Hussain, Zhi-Xun Shen and Michael F.

Crommie. "Characterization of collective ground states in single-layer 2H-$NbSe_2$"
Nature Physics 12, 92 (2016).

16. Seita Onishi, Miguel M. Ugeda, Yi Zhang, Yi Chen, Claudia Ojeda-Aristizabal, Hyejin Ryu, Sung-Kwan Mo, Zahid Hussain, Zhi-Xun Shen, Michael F. Crommie and Alex Zettl "Selenium capped monolayer NbSe2 for two-dimensional superconductivity studies" **Physica Status Solidi b 253, 2396 (2016)**.
17. Long Ju, Zhiwen Shi, Nityan Nair, Yinchuan Lv, Chenhao Jin, Jairo Velasco Jr., Claudia Ojeda-Aristizabal, Hans A. Bechtel, Michael C. Martin, Alex Zettl, James Analytis and Feng Wang, "Topological valley transport at Bilayer graphene domain walls"
Nature 520, 650 (2015)
18. Hamid R. Barzegar, Eduardo G. Espino, Aiming Yan, C. Ojeda-Aristizabal, Gabriel Dunn, Thomas Wagberg and A Zettl, "C_{60} / Collapsed carbon nanotube hybrids - a variant of peapods"
Nano Lett. 15, 829 (2015).
19. C. Ojeda-Aristizabal, W. Bao and M. S. Fuhrer "Thin film barristor: a gate tunable vertical graphene-pentacene device".
Phys. Rev. B 88, 035435 (2013).
20. C. Ojeda-Aristizabal, M. S. Fuhrer, I. Appelbaum "Towards spin injection from silicon into topological insulators: Schottky barrier between Si and Bi_2Se_3".
Appl. Phys. Lett. 101, 023102 (2012).
21. M. Monteverde, C. Ojeda-Aristizabal, K. Komatsu, C. Li, M. Ferrier, S. Guéron, H. Bouchiat "What are the relevant disorder scales for quantum transport in graphene?".
J. Low Temp. Phys. 167, 1 (2012).
22. C. Ojeda-Aristizabal, M. Monteverde, R.Weil, M. Ferrier, S. Guéron, and H. Bouchiat "Conductance fluctuations and field asymmetry of rectification in graphene".
Phys. Rev. Lett. 104, 186802 (2010).
23. M. Monteverde, C. Ojeda-Aristizabal, R. Weil, M. Ferrier, S. Guéron, H. Bouchiat, J.N. Fuchs, D.Maslov "Transport and elastic scattering times as probes of the nature of impurity scattering in single and bilayer graphene".
Phys. Rev. Lett. 104, 126801 (2010).
24. C. Ojeda-Aristizabal, M. Ferrier, S. Guéron, and H. Bouchiat "Tuning the proximity effect in a superconductor-graphene-superconductor

junction"
Phys. Rev. B 79, 165436 (2009).

25. A. Chepelianskii, P. Delplace, A. Shailos, A. Kasumov, R. Deblock, M. Monteverde, C. Ojeda-Aristizabal, M. Ferrier, S. Guéron, and H. Bouchiat "Phonon-assisted dynamical Coulomb blockade in a thin suspended graphite sheet".
Phys. Rev. B 79 235418 (2009).

Teaching experience

Instructor (2015-present)

- *Quantum Physics II* Senior undergraduate students. California State University Long Beach.
- *Advanced experimental methods in nanoscale physics*. Master students and senior undergraduates. California State Univerity Long Beach.
- *Electricity and magnetism* First year undergraduate students. California State Univerity Long Beach.
- *Mechanics and heat* First year undergraduate students. California State Univerity Long Beach.

Teaching assistant (2009)

- *Waves and electromagnetism* Second year undergraduate students. Université Paris-Saclay, France.

Teaching assistant (2005-2006)

- *Physics II (Oscillations, mechanical waves, thermodynamics). First and second year undergraduate students. Universidad de los Andes, Bogotá Colombia*.

Teaching assistant (2004)

- *Physics III (Optics and electromagnetism)*
- *Physics II (Oscillations, mechanical waves, thermodynamics)*
- *Physics I (Mechanics)*
- *Physics for designers and architects*.

First and second year undergraduate students. Universidad de los Andes, Bogotá Colombia.

Profesional Service

Proposal reviewer for the US Department of Energy, Basic energy sciences, the National Science Foundation, Division of Materials Research and the Stanford Synchrotron Radiation Lightsource at SLAC.

Reviewer for Nature Physics, Nature Communications, Physical Review Letters, Physical Review B, Applied Physics Letters, Scientific reports, ACS's Journal Applied Materials and Interfaces, Elsevier's journals, ACS Nano, Europhysics Letters.

Invited talks

1. SACNAS NDiSTEM conference, Invited session, "The promise of quantum materials for quantum information science" Columbus, OH (2025)
2. APS Far West meeting plenary speaker, *The life of electrons in quantum materials: navigating conflicting effects and creating new phases of matter*. Santa Cruz, CA (2025).
3. DOE Principal Investigators meeting, *Restoration of weak localization in bilayer graphene by a molecular thin film*. Washington DC (2025).
4. University of Southern California Colloquium, *Tailoring topological quantum materials*. Los Angeles, CA (2025).
5. UCLA The Southern California Users of Magnets meeting, *The competition of topology and magnetism in quantum materials probed through photoemission experiments*. Los Angeles, CA (2024).
6. Washington University in St. Louis, Workshop Progress in 2D Kitaev materials, *Accessing ground states in insulating Kitaev materials through electronic transport measurements*. St. Louis, MO (2024).
7. California State University Long Beach Physics Colloquium, *What quantum materials can reveal when interrogatred with photoemission and electronic transport probes*. Long Beach, CA (2024).
8. The Ohio State University Physics Colloquium, *The competition of magnetism and topological states of matter in quantum materials probed through angle resolved photoemission spectroscopy*. Columbus, OH (2023).
9. DOE Principal Investigators meeting, *Accessing ground states in insulating Kitaev materials*. Washington DC (2023).
10. Universite Paris-Saclay Condensed Matter Seminar, *Interplay of topology and magnetism in low dimensional materials.* Orsay, France (2023).

11. Ecole Normale Superieure Condensed Matter Seminar, *Interplay of topology and magnetism in low dimensional materials*. Paris, France (2023).
12. UCLA Condensed Matter Seminar, *Quantum phase transitions in molecular solids and topological semimetals probed through Angle Resolved Photoemission Spectroscopy*. Los Angeles, CA (2023).
13. UC Santa Cruz, COSMOS summer school *The California State Summer School for Mathematics and Science*, Online (2022).
14. Universidad de Los Andes, Bogota Colombia. Physics Colloquium *Studying quantum phase transitions in Da Vinci nanostructures* Online (2020)
15. UC Santa Cruz, COSMOS summer school *The California State Summer School for Mathematics and Science*, Online (2021).
16. Universidad de Los Andes, Bogota Colombia. Condensed Matter Physics Seminar *Experimental signature of strain-controlled domain walls in multilayer graphene through quantum Hall effect,* Online (2020)
17. Department of Energy Experimental Condensed Matter Physics Principal Investigator's Meeting *First observation of highly dispersive bands in thin film* C_{60} Gaithersburg, MD (2019).
18. UC Santa Cruz. Condensed Matter Physics Seminar. *Studying the effects of strain in graphene using a micro-electro-mechanical systems (MEMS)*. Santa Cruz, CA (2019).
19. California State University Northridge. Physics Colloquium. *First observation of highly dispersive bands in thin film* C_{60}, Northidge, CA (2019).
20. Cal Poly Pomona. Physics Colloquium. *First observation of highly dispersive bands in thin film* C_{60}, Pomona, CA (2019).
21. Harvey Mudd College, Physics Colloquium *Thin film C60: a new available block to build van der Waals heterostructures* Claremont, CA (2018).
22. University of Southern California, Condensed Matter Physics Seminar *Thin film C60: a new available block to build van der Waals heterostructures* Los Angeles, CA (2018).
23. Caltech, WiPMA meeting *Macroscopic and quantum coherent phenomena in two-dimensional materials*. Pasadena, CA (2017).
24. California State University Long Beach, Colloquium at the Department of Chemistry and Biochemistry *Exploring novel relativistic*

Mott insulators in the two-dimensional limit. Long Beach, CA (2017).

25. California State University Los Angeles. Physics Colloquium. *Exploring novel relativistic Mott insulators in the two-dimensional limit*. Los Angeles, CA (2017).
26. Cal Poly Pomona. Physics Colloquium. *Graphene and Van der Waals heterostructures: electronic transport and angle resolved photoemission spectroscopy*. Pomona, CA (2016)
27. UC Santa Cruz. Condensed Matter Physics Seminar. *Electronic transport in van-der Waals heterostructures and bandstructure tailoring by angle resolved photoemission spectroscopy ARPES*. Santa Cruz, CA (2016).
28. CSULA. Physics Colloquium. *Quantum phenomena in graphene and layered heterostructures*. Los Angeles, CA (2016).
29. UCLA, Condensed Matter Physics Seminar. Los Angeles, CA (2015)
30. California State University, Los Angeles. Physics Colloquium. Los Angeles, CA (2015)
31. Drexel University. Physics Colloquium. Philadelphia, PA (2015).
32. Missouri University of Science and Technology. Physics Colloquium. Rolla, MO (2015).
33. Portland State University. Physics Colloquium. *Quantum Phenomena in graphene and layered hetersotructures*. Portland, OR (2015).
34. California State University Long Beach. Physics Colloquium. *Graphene: quantum phenomena and layered heterostructures*. Long Beach, CA (2015).
35. Conference organizer. *Experimental techniques in graphene research*. Universidad de Los Andes, Bogota Colombia, August (2014).
36. Penn State University. Condensed, Atomic and Molecular Physics Seminar. *Quantum transport in graphene*. State College PA, (2010).
37. Princeton University, Condensed Matter Physics Seminar. *Quantum transport in graphene*. Princeton NJ, (2010).
38. Unversité Paul Verlaine Institut de Chimie, Physique et des Matériaux, Condensed Matter Physics Seminar. *Transport électronique dans le graphène*. Metz France, (2010).
39. European Conference GDR Graphene nanotubes. *Conductance fluctuations in a monolayer and a bilayer graphene*. Coma-ruga (Catalonia) Spain, (2009).

40. Scuola Normale Superiore, Condensed Matter Physics Seminar. *Superconducting proximity effect in graphene*. Pisa Italy, (2008).

Contributed Talks

- Claudia Ojeda-Aristizabal, Drew Latzke, Jonathan Delinger, Alex Zettl and Alessandra Lanzara *Observation of angle resolved bands of C_{60} by photoemission spectroscopy* APS March meeting, Baltimore Maryland (2016).
- C.Ojeda Aristizabal, E.J.G.Santos, S.Onishi, H.Rasool, J.Velasco Jr., S.Kahn, Aiming Yan, and A.Zettl *A boron nitride - graphene - C_{60} heterostructure* APS March meeting, San Antonio Texas (2015) .
- C. Ojeda-Aristizabal, S. Onishi, H. Rasool , C. Carruth and A. Zettl, *Using graphene to track the conductivity of C60* APS March meeting, Denver Colorado (2014).
- C Ojeda-Aristizabal, W Bao and M.S. Fuhrer *Thin film barristor: a gate tunable vertical graphene-pentacene-gold device* Bulletin of the American physical society 58, APS March meeting, Baltimore Maryland (2013).
- C Ojeda-Aristizabal, MS Fuhrer and I. Appelbaum *Towards spin injection from silicon into topological insulators*. Bulletin of the American physical society 57, APS March meeting, Boston Massachusetts (2012).