

CURRICULUM VITAE : Alexis A. Aguilar-Arévalo

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Place and date of birth: México City, 1975
Citizenship: Mexican
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Current Status:

Titular Researcher (*Investigador Titular A*), Instituto de Ciencias Nucleares, UNAM, Mexico D.F.
Chair of the Department of High Energy Physics.

Academic background:

- **Ph.D.** *Columbia University, Graduate School of Arts and Sciences*, February 2008; Ph.D. Thesis: “*An Improved Neutrino Oscillations Analysis of the MiniBooNE Data*”.
- **M.Phil.** *Columbia University, Graduate School of Arts and Sciences*, February 2004.
- **Masters Degree** in Physics, *Universidad Nacional Autónoma de México*, June 2002.
- **Bachelor Degree** (*Licenciatura en Física*): *Facultad de Ciencias, UNAM*, August, 1999; Undergraduate Thesis: “*Neutrino Oscillations : the DAR experiment in LSND*”
- **High School**, Physics-Math Area Diploma: *Centro Universitario México A.C.*, 1994.

Research experience

- Titular A Researcher, Department of High Energy Physics, ICN-UNAM, May 7 2015 to date.
- Associate C Researcher, Department of High Energy Physics, ICN-UNAM, Feb 2, 2009 - May 7, 2015.
- Post-Doctoral Research Associate, PIENU experiment, Jan – Dec of 2008.
- Graduate Research Assistant, *Columbia Neutrino Group*, Physics Department, Columbia University, project: “*MiniBooNE Experiment*”, Sep. 2002 – Dec. 2007.
- Visiting research student, project: “*Large Angle Analysis with the Harp RPC’s*” (ref. J. Wotschack), CERN, Geneva, Switzerland, Mar - Apr, 2002.
- Undergraduate summer student, project: “*Neutrino Oscillations at LSND*”, *Los Alamos National Laboratory, LANSCE*, Jun-Jul 1998, and Feb-Mar 1999.
- Social Service research, project: “*Optical spectroscopy of metal-oxide gels with organic and inorganic impurities*”, Instituto de Física UNAM , Nov 1997 – May 1998.
- Undergraduate summer student, project: “*Magnetic properties of materials at low temperatures*”, Instituto de Investigaciones en Materiales (IIM-UNAM), May - June 1997.

Participation in research projects

1. Principal Investigator, project “ Dark matter and neutrino physics in the CCM and CONNIE experiments”, PAPIIT DGAPA-UNAM No. IN104723, Jan 2023 to Dec 2025.
2. Principal Investigator, project “Neutrino physics via the coherent elastic scattering with nuclei”, PAPIIT DGAPA-UNAM No. IT100420, Jan 2020 to Dec 2022
3. Participant, project “*PlomBoxear: A Device for Open Source Metrology to Fight Lead Contamination in Drinking Water*”, UKRI-GCRF, Global Research Translation Awards, UK, Oct 2019 a Mar 2021.
4. Participant, project “*Materia Oscura: Instrumentation Development to Observe the Invisible*”, Global Challenges Research Fund (GCRF), UK, 1 April 2018 to 31 March 2020.
5. Participant, project “*Estudio de partículas débilmente interactuantes mediante sensores CCD*”, PAPIIT DGAPA-UNAM No. IN108917, Jan 2017 to Dec 2018.
6. Participant, project “*Investigación experimental y fenomenológica en torno a partículas que interaccionan débilmente*”, CONACYT, CB-2014-1, No. 0240666, 10 April 2015 to 09 Apr 2018.
7. Participant, project “*Análisis de datos de fenomenología de neutrinos*”, No. CB71-CIC2014, Impacto Caribe, Universidad del Atlántico, Barranquilla, Colombia; Nov 2015 to Jun 2017.
8. Participant, “*Red Académica de Experimentos en Laboratorios Subterráneos*”, Subprogram of Academic Networks, DGECI-UNAM, June 2014 to December 2015.
9. Primary Investigator, project “*Desarrollo de detectores de materia oscura y neutrinos*”, PAPIIT DGAPA-UNAM No. IB100413, Jan 2013 to December 2014.
10. Participant, project “*Fenomenología y experimentación con neutrinos y materia oscura*”, PAPIIT DGAPA-UNAM No. IN112213, Jan 2013 to Dec 2015.
11. Primary Investigator, project “*Investigación y Desarrollo en detectores de antineutrinos para el monitoreo de instalaciones nucleares*”, SEP-CONACYT, CB-2009, No. 0131598, 4 April 2010 to 3 October 2014.
12. Participant, “*Red Temática CONACYT de Física de Altas Energías*”, CONACYT, since 2009.

Teaching experience

Graduate Level

1. Professor, graduate course: Introduction to Neutrino Physics, 64 hr, Posgrado en Ciencias Físicas, UNAM, August-December 2024.
2. Professor, graduate course: Introduction to Neutrino Physics, 64 hr, Posgrado en Ciencias Físicas, UNAM, February-June 2023.
3. Professor, graduate course: Methods of Experimental High Energy Physics, 96 hr, Posgrado en Ciencias Físicas, UNAM, August-December 2022.
4. Professor, graduate course: Introduction to Neutrino Physics, 64 hr, Posgrado en Ciencias Físicas, UNAM, February-June 2022.
5. Professor, graduate course: Introduction to Neutrino Physics, 64 hr, Posgrado en Ciencias Físicas, UNAM, February-June 2021.
6. Professor, graduate course: Methods of Experimental High Energy Physics, 96 hr, Posgrado en Ciencias Físicas, UNAM, February-June 2020.
7. Professor, graduate course, Introduction to Neutrino Physics, Jointly with Prof. Catalina Espinoza Hernández, 48 hr; Posgrado en Ciencias Físicas, UNAM, January – June 2018.
8. Professor, graduate course, Introduction to Neutrino Physics, 48 hr; Posgrado en Ciencias Físicas, UNAM, February – June 2016.
9. Teacher of the Electromagnetism segment of the Preparatory Course for Admission to the Graduate Program on Physical Sciences and the Graduate Program on Astronomy, 24 hr, UNAM, October-November, 2010.

Undergraduate Level

1. Subject Professor A; Nuclear and Subnuclear Physics, 48 hr, Facultad de Ciencias, UNAM, Jan-Jun, 2024.
2. Laboratory Professor; Mechanics Laboratory, 96 hr; Facultad de Ciencias, UNAM, Aug–Dec, 2019.
3. Subject Professor A; Contemporary Physics, 48 hr, Facultad de Ciencias, UNAM, Aug – Dec, 2018.
4. Laboratory Professor; Mechanics Laboratory, 96 hr; Facultad de Ciencias, UNAM, Jan–Jun, 2018.
5. Laboratory Professor; Mechanics Laboratory, 96 hr; Facultad de Ciencias, UNAM, Aug–Dec, 2017.
6. Laboratory Professor; Mechanics Laboratory, 96 hr; Facultad de Ciencias, UNAM, Feb – Jun, 2015.
7. Subject Professor A; Contemporary Physics, 48 hr, Facultad de Ciencias, UNAM, Aug – Dec, 2014.
8. Laboratory Professor; Contemporary Physics Laboratory II, 96 hr; Facultad de Ciencias, UNAM, Feb–Jun, 2013.
9. Subject Professor A; Introduction to Elementary Particle Physics I, 48 hr, Facultad de Ciencias, UNAM, Feb–Jun 2012.
10. Subject Professor A; Introduction to Elementary Particle Physics I, 48 hr, Facultad de Ciencias, UNAM, Feb–Jun 2011.
11. Subject Professor A; Introduction to Elementary Particle Physics I, 48 hr, Facultad de Ciencias, UNAM, Feb–Jun 2010.
12. Subject Professor A; Vector Mechanics, Facultad de Ciencias, 96 hr, UNAM, Aug - Nov 2009.
13. Part Time Professor; Mathematics for Engineering III, 48 hr; Instituto Tecnológico Autónomo de México (ITAM), Fall Semester 2001
14. Part Time Professor; Mathematics for Engineering III, 48 hr; Instituto Tecnológico Autónomo de México (ITAM), Summer term 2002
15. Subject Professor A; General Physics (Laboratory), Facultad de Ciencias, UNAM, Jan- Jun 2001

Teaching Assistant

1. Teaching Fellow, Pre-Med Physics Lab, Physics Department, Columbia University, New York, Sep 002- May 2003
2. Teaching Assistant A; Modern Physics III, Facultad de Ciencias, UNAM, Sep 2000 - Jan 2001
3. Teaching Assistant A; General Physics, Facultad de Ciencias, UNAM, Jan 1998 - Jan 1999.
4. Teaching Assistant; General Physics, Central College (Pella, Iowa, USA) Aug - Dec 1995

Directed Theses

Doctorate

1. “*Searches fo physics beyond the standard model with scientific CCDs and study of the ionization efficiency in silicon and germanium at low energies*”, Youssef Sarkis Mobarak, Posgrado en Ciencias Físicas, UNAM, **Ph.D.**, with Honorable Mention, Date of exam 10 February 2022.

Masters / Protocol for the Doctorate

1. “*Measurement of the vertical intensity and angular distribution of atmospheric muons with a scintillator detector*”, Bryan Olmos Yáñez, Posgrado en Ciencias Físicas, UNAM, **Masters**, Date of Exam 24 May 2021.

2. "Simulation and characterization of a high-purity Germanium detector to measure low levels of radioactivity in materials", Carlos Iván Ortega Hernández, UNAM, **Masters, with Honorable Mention**, Date of Exam 23 September 2020.
3. "Science-grade CCDs for direct dark matter searches and neutrino detection: the DAMIC and CONNIE experiments", Youssef Sarkis Mobarak, Posgrado en Ciencias Físicas, UNAM, **Masters/(Protocol for the Doctorate)**. Date of exam 31 May 2017.
4. "Potential of CCDs for the study of sterile neutrino oscillations through coherent elastic neutrino-nucleus scattering", Marisol Chávez Estrada, Posgrado en Ciencias Físicas, UNAM **Masters**. Date of exam 23 January 2017.

Undergraduate

1. "Calculation of the interaction rate of nuclear reactor neutrinos by Coherent Elastic Neutrino nucleus Scattering in a new generation CCD-based detector", División de Ciencias Básicas, UAM-Azcapotzalco, **Undergraduate**. Integration Project approved on XX June, 2024.
2. "The Coherent CAPTAIN-Mills (CCM) experiment and the search for the sterile neutrino", José Plata Salas, Facultad de Ciencias, UNAM. **Undergraduate**. Date of exam March 10, 2022.
3. "Simulation of the response of a plastic scintillator bar to the cosmogenic muon flux at Ciudad Universitaria", Bryan Olmos Yáñez, Physics, Facultad de Ciencias, UNAM, **Undergraduate**. Date of exam 3 August 2018.
4. "CCD sensors for the direct search of dark matter: the DAMIC experiment", Guadalupe Moreno Granados, Physics, Facultad de Ciencias, UNAM, **Undergraduate**. Date of exam September 3, 2015.
5. "The search for muon neutrino disappearance in the Fermilab Booster Neutrino Beam", Diana Patricia Méndez Méndez, Physics, Facultad de Ciencias, UNAM, **Undergraduate, with Honorable Mention**. Date of exam May 6 2015.
6. "Estimating the sensitivity of a CCD-based detector for WIMP dark matter searches", Youssef Sarkis Mobarak, Physics, Facultad de Ciencias, UNAM, **Undergraduate**. Date of exam November 28, 2014.
7. "The antineutrino flux from the Laguna Verde Nuclear Plant and its detection", Marisol Chávez Estrada, **Undergraduate**, Physics, Facultad de Ciencias, UNAM. Date of exam June 26, 2014.
8. "Neutrino Oscillations searches in the MiniBooNE experiment: the nue and nuebar appearance analyses", Iker Loik de Icaza Astiz, Facultad de Ciencias, UNAM, **Undergraduate**, with *Honorable Mention*. Date of exam December 6, 2013.

Theses in progress

1. "Measurement of atmospheric muons with new generation CCDs", Mauricio Sánchez Ramírez, Facultad de Ciencias, UNAM. **Undergraduate**. Started September 2020. **In progress**.

Participation in editorial boards and proposal evaluations

1. Review Editor, Journal *Frontiers in High Energy Physics and Astrophysics*, Nov 2013 – Aug 2016.
2. Proposal reviewer: CONACYT (Mexico) (x10), DGAPA-PAPIIT (UNAM) (x6), FONDECYT (Chile) (x1).
3. Reviewer for the international scholarships program of CONACYT, 2014, 2nd period.
4. Reviewer for the international scholarships program of CONACYT, "Demanda Libre-2018", 1st period.
5. Reviewer Arturo Rosembueth Prize, 2019, best doctoral theses in Exact and Natural Sciences Area, CINVESTAV-IPN, 2019.

Participation in examination boards and juries

Doctorate

1. **Ph.D.** exam board, external examiner: “*Perspectives to measure neutrino cross sections in near detectors (ICARUS and PRISM-like) and their implications for precision physics*”, Guadalupe Moreno Granados, Department of Physics, CINVESTAV-IPN, June 22, 2024.
2. **Ph.D.** exam board, Secretary/Advisor: “*Searches fo physics beyond the standard model with scientific CCDs and study of the ionization efficiency in silicon and germanium at low energies*”, Youssef Sarkis Mobarak, Posgrado en Ciencias Físicas, UNAM, February 10, 2022.
3. **Ph.D.** exam board, Vocal: “*Study on dark matter-argon interactions with effective field theories and non-thermal halo components using the DEAP-3600 experiment,*”, Ariel Zúñiga Reyes, Posgrado en Astrofísica, UNAM, January 18, 2022.
4. **Ph.D.** exam board, President. “*Neutrino mass generation and dark matter models*”. Jorge Mario Lamprea Garzon, Posgrado en Ciencias Físicas, UNAM, September 28, 2018.
5. **Ph.D.** exam board, Vocal: “*Study of the mixing in quarks and leptons through their mass hierarchy and with an S3 flavor model*”, Ulises Jesús Saldaña Salazar, Posgrado en Ciencias Físicas, UNAM, Abril 22, 2015.
6. **Ph.D.** exam board, external examiner: “*New physics and neutrino phenomenology in some frontier experiments*”, Estela Alejandra Garcés García, Department of Physics, CINVESTAV-IPN, June 13, 2012.
7. **Ph.D.** exam board, Secretary: “*Permutational Symmetry S3: Flavor and Zeroes of Texture*”, Felix Francisco González Canales, Posgrado en Ciencias Físicas UNAM, Octubre 27, 2011.

Candidacy for the Ph.D.

1. **Ph.D. Candidacy** exam board, Vocal: “*Hadron production in High-multiplicity proton-proton collisions measured with ALICE and upgrade of the ALICE Detector*”, Jesús Eduardo Muñoz Méndez, Posgrado en Posgrado en Ciencias Físicas, UNAM, Jun 14 2024.
2. **Ph.D. Candidacy** exam board, Vocal: “*Study of CEvNS and CC scattering of neutrinos with a liquid argon detector*”, Marisol Chávez Estrada, Posgrado en Posgrado en Ciencias Físicas, UNAM, Jan 18 2023.
3. **Ph.D. Candidacy** exam board, Secretary: “*Study of CP violation with neutrino oscillations in matter*”, José Arnulfo Herrera Lara, Posgrado en Posgrado en Ciencias Físicas, UNAM, Oct 4 2021.
4. **Ph.D. Candidacy** exam board, Secretary: “*Scintillating Bubble Chamber with Argon for the measurement of Coherent Elastic Neutrino-Nucleus Scattering and the Search for Dark Matter*”, Ernesto Alfonso Pita, Posgrado en Posgrado en Ciencias Físicas, UNAM, Jun 29 2021.
5. **Ph.D. Candidacy** exam board, Vocal: “*Physics of low energy events with Charge Coupled Devices*”, Brenda Aurea Cervantes Vergara, Posgrado en Ciencias Físicas, UNAM, May 7 2021.
6. **Ph.D. Candidacy** exam board, Vocal: “*Identification of Dark Matter in the Milky Way and neutrino interactions: detection with liquid argon*”, Ariel Zúñiga Reyes, Posgrado en Astrofísica, UNAM, Jun 4 2019.
7. **Ph.D. Candidacy** exam board, Secretary: “*Potencial of three higgs doublets under S3 symmetry*”, Adriana Pérez Martínez, Posgrado en Ciencias Físicas, UNAM, Mar 15 2019.
8. **Ph.D. Candidacy** exam board, Vocal: “*Multiquark systems with heavy baryons*”, Emmanuel Ortiz Pacheco, Posgrado en Ciencias Físicas, UNAM, Jan 25 2019.
9. **Ph.D. Candidacy** exam board, Secretary: “*Modelos para la generación de masas de neutrinos y materia oscura*”, Jorge Mario Lamprea Garzón, Posgrado en Ciencias Físicas, UNAM, Nov 15 2016.
10. **Ph.D. Candidacy** exam board, Deputy, “*Electromagnetic couplings and self-energies of baryons in the unquenched quark model*”, Hugo García Tecocoatzi, Posgrado en Ciencias Físicas, UNAM, August 30 2013.

Masters

1. **Masters** exam board, Vocal: “*GEANT4 simulations for the calibration of the SBC detector using photonuclear sources*”, Oscar Iván Valdés Martínez”, Posgrado en Ciencias Físicas, UNAM, February 12, 2024.

2. **Masters** exam board, Vocal: "The profile of non-standard cosmic strings", José Antonio García Hernández, Posgrado en Ciencias Físicas, UNAM, June 22, 2023.
3. **Masters** exam board, Vocal: "Relation between the oscillation probabilities in matter of electron neutrinos and electron antineutrinos", Carlos Leonardo Juárez Mansilla, Posgrado en Ciencias Físicas, UNAM, October 31, 2022.
4. **Masters** exam board, Secretary: "Transverse momentum spectrum as a function of multiplicity and transverse sphericity in pp collisions using a Bayesian unfolding", José David Romo López, Posgrado en Ciencias Físicas, UNAM, August 19, 2022.
5. **Masters** exam board, President: "Experimental studies of the disintegration of ^{46}Mn and its connection with core collapse supernovae", David Godos Valencia, Posgrado en Ciencias Físicas, UNAM, February 8, 2022.
6. **Masters** exam board, Vocal: "Study of the radiogenic neutron backgrounds in DEAP-3600", Mario Andrés Alpízar Venegas, Posgrado en Ciencias Físicas, UNAM, September 10, 2021.
7. **Masters** exam board, Vocal: "Development of algorithms for identification of muon trajectories in the HAWC Observatory with neural networks", José Roberto Angeles Camacho, Posgrado en Ciencias Físicas, UNAM, July 1, 2021.
8. **Masters** exam board, Secretary/Advisor: "Measurement of the vertical intensity and angular distribution of atmospheric muons with a scintillator detector ", Bryan Olmos Yáñez, Posgrado en Ciencias Físicas, UNAM, May 24, 2021.
9. **Masters** exam board, Secretary/Advisor: "Simulation and characterization of a high-purity Germanium detector to measure low levels of radioactivity in materials", Carlos Iván Ortega Hernández, Posgrado en Ciencias Físicas, UNAM, September 23, 2020.
10. **Masters** exam board, President. "Stable Dark Matter and neutrino masses from a discrete group". León Manuel García de la Vega, Posgrado en Ciencias Físicas, UNAM, August 2, 2019.
11. **Masters** exam board, President. "Monte Carlo simulation of a scintillating liquid argon bubble chamber for the study of elastic neutrino-nucleus scattering". Ernesto Alfonso Pita, Posgrado en Ciencias Físicas, UNAM, July 25, 2019.
12. **Masters** exam board, Vocal. "Indirect searches for dark matter in the Virgo galaxy cluster with the HAWC Observatory". Sergio Hernández Cadena, Posgrado en Ciencias Físicas, UNAM, May 22, 2018.
13. **Masters**/(protocol for the Ph.D) exam board, Secretary/Advisor: "Science-grade CCDs for direct dark matter searches and neutrino detection: the DAMIC and CONNIE experiments", Youssef Sarkis Mobarak, Posgrado en Ciencias Físicas, UNAM, May 31, 2017.
14. **Masters** exam board, President: "Dark matter in a model with 4 Higgs doublets and S_3 symmetry", Humberto Alonso Reyes González, Posgrado en Ciencias Físicas, UNAM, April 21, 2017.
15. **Masters** exam board, Secretary/advisor: "Potential of CCDs for the study of sterile neutrino oscillations through coherent elastic neutrino-nucleus scattering", Marisol Chávez Estrada, Posgrado en Ciencias Físicas, UNAM, Jan 23, 2017.
16. **Masters** exam board, Vocal. Neutrino transition radiation and supernovae. Sheryl Maritza Melara Durón, Posgrado en Ciencias Físicas, UNAM, August 10, 2016.
17. **Masters** exam board, President. The beta decays of baryons: valence and sea quarks. Emmanuel Ortiz Pacheco, Posgrado en Ciencias Físicas, UNAM, August 4, 2016.
18. **Masters** exam board, Secretary: "Dihadronic correlations with strangeness in proton-proton collisions at 7 TeV in ALICE", Xitzel Sánchez Castro, Posgrado en Ciencias Físicas, UNAM, October 5, 2011.
19. **Masters** exam board, Secretary: "Study of neutrino oscillations under the light of the theory of fields", César Agón Quintero, Posgrado en Ciencias Físicas UNAM, Agosto 19, 2011.

Undergraduate

1. **Undergraduate** exam board. Deputy "The pion amplitude distribution: a phenomenological approach". Danaheb Navarro Durán, Physics, Facultad de Ciencias, UNAM, Oct 18, 2023.
2. **Undergraduate** exam board. Deputy "Study of the poles of the scattering matrix in a simple model". Selene Martínez Ventura, Physics, Facultad de Ciencias, UNAM, Apr 20, 2023.

3. **Undergraduate** exam board. Deputy "Measurement by AMS of the cross section of the reaction $^{28}\text{Si}(d, \alpha)^{26}\text{Al}$, near the Coulomb barrier". Amacalli Bonitzu Zunun Torres, Physics, Facultad de Ciencias, UNAM, Sep 5, 2022.
4. **Undergraduate** exam board. Deputy "Simulation by Monte Carlo methods of a High Purity Germanium Detector". Alberto Acevedo Rentería, Physics, Facultad de Ciencias, UNAM, Aug 17, 2022.
5. **Undergraduate** exam board. Vocal "Characterization of a Germanium Detector". Sandra Nashieli Alvarado Mijangos, Physics, Facultad de Ciencias, UNAM, May 6, 2022.
6. **Undergraduate** exam board. Secretary/Advisor "The Coherent CAPTAIN-Mills (CCM) experiment and the search for the sterile neutrino". Jose Plata Salas, Physics, Facultad de Ciencias, UNAM, March 10, 2022.
7. **Undergraduate** exam board. President "Characterization and fine-tuning of the FEBEX3 digitizer system of the SIMAS detector array for experiments with nuclear reactions". Luis Roberto Ríos Alvarez, Physics, Facultad de Ciencias, UNAM, November 23, 2021.
8. **Undergraduate** exam board. Sulplent "Two-particle irreducible effective action of a dense neutrino gas". Irvin Manelick Hernández Román, Physics, Facultad de Ciencias, UNAM, September 27, 2021.
9. **Undergraduate** exam board. Vocal. "The Klein paradox and its modern applications". Rodrigo Guzmán Castro, Physics, Facultad de Ciencias, UNAM, February 22, 2021.
10. **Undergraduate** exam board. Secretary: "Methodological proposal for the installation of an underground laboratory in the UNESCO Global Geopark Comarca Minera de Hidalgo", Iván Gustavo Vallejo Castillo, Mining and Metalurgic Engineering, Facultad de Ingeniería, UNAM, November 19, 2020.
11. **Undergraduate** exam board. Vocal. "Characterization of the jet production cross section in hadronic collisions". Miriam Janette Gutiérrez Ramírez, Physics, Facultad de Ciencias, UNAM, August 30, 2019.
12. **Undergraduate** exam board. Vocal. "Comparative study of neutrino and antineutrino oscillations for two and three generations". Carlos Leonardo Juárez Mansilla, Physics, Facultad de Ciencias, UNAM, August 1st, 2019.
13. **Undergraduate** exam board. Secretary/Advisor. "Simulation of the response of a plastic scintillator detector to the cosmogenic muon flux at Ciudad Universitaria". Bryan Olmos Yáñez, Physics, Facultad de Ciencias, UNAM, August 3, 2018.
14. **Undergraduate** exam board. President: "Simulation of a resistive plate chamber detector", Dalia Lucero Ramírez Guadarrama, Physics, Facultad de Ciencias, UNAM, April 27, 2018.
15. **Undergraduate** exam board. Vocal: "External and internal neutron-induced noise in the SNO+ experiment", José Luis Hernández Hernández, Física, Facultad de Ciencias, UNAM, September 18, 2017.
16. **Undergraduate** exam board, President: "Neutrino oscillations for the study of the Earth's interior", José Arnulfo Herrera Lara, Physics, Facultad de Ciencias, UNAM, Jan 23, 2017.
17. **Undergraduate** exam board, Vocal: "Experimental study of the production of $K^*(892)$ and $f(1020)$ in p-Pb collisions at the LHC", Talhia Gallegos Medina, Physics, Facultad de Ciencias, UNAM, Sep 27, 2016.
18. **Undergraduate** exam board, Secretary/Advisor: "CCD sensors for the direct search for dark matter: the DAMIC experiment", Guadalupe Moreno Granados, Física, Facultad de Ciencias, UNAM. September 3, 2015.
19. **Undergraduate** exam board, Secretary: "Graphic tool for the automation of the characterization of scientific CCDs", Alejandro Castañeda Vázquez y Karen Pamela Hernández Torres, Ingeniería Eléctrica y Electrónica, Facultad de Ingeniería, UNAM, July 28, 2015.
20. **Undergraduate** exam board, Secretary/Advisor: "The search for muon neutrino disappearance in the Fermilab Booster Neutrino Beam", Diana Patricia Méndez Méndez, Physics, Facultad de Ciencias, UNAM, May 6, 2015.
21. **Undergraduate** exam board, Secretary/Advisor: "Estimating the sensitivity of a CCD-based detector for WIMP dark matter searches", Youssef Sarkis Mobarak, Physics, Facultad de Ciencias, UNAM, November 28, 2014.
22. **Undergraduate** exam board, Secretary/Advisor: "The antineutrino flux from the Laguna Verde Nuclear Plant and its detection", Marisol Chávez Estrada, Physics, Facultad de Ciencias, UNAM, June 26, 2014.
23. **Undergraduate** exam board, Secretary: "Development of a monitoring and control system for the DAMIC experiment", Carolina Arlette Salazar Lagunes, Mecatronic Engineering, Facultad de Ingeniería, UNAM, May 12, 2014.

24. **Undergraduate** exam board, Secretary/advisor: “Neutrino oscillations searches with the MiniBooNE experiment: electron neutrino and antineutrino appearance analyses”, Iker Loic de Icaza Astiz, Physics, Facultad de Ciencias, UNAM, December 6, 2013.
25. **Undergraduate** exam board, Deputy Secretary: “Charged particle identification in proton-proton collisions in ALICE”, Raúl Tonatíuh Jiménez Bustamante, Physics, Facultad de Ciencias UNAM, Jan 18, 2012.

Other

1. Examiner **CASI** (Certificación Académica de Suficiencia en Investigación), Applicant: Rajan Anderson-Dornan, for admission to the Doctorate at PCF-UNAM for Semester 2024-2. Date: November 16, 2023.
2. Examiner **CASI** (Certificación Académica de Suficiencia en Investigación), Applicant: Hernán Enrique Noriega Barrios, for admission to the Doctorate at PCF-UNAM for Semester 2022-2. Date: November 9, 2021.
3. Examiner **CASI** (Certificación Académica de Suficiencia en Investigación), Applicant: Mario Andrés Alpízar Venegas, for admission to the Doctorate at PCF-UNAM for Semester 2022-1. Date: May 14, 2021.
4. Examiner **CASI** (Certificación Académica de Suficiencia en Investigación), Applicant: Martín Látigo Vázquez, for admission to the Doctorate at PCF-UNAM for Semester 2021-1. Date: May 8, 2020.
5. Examiner **CASI** (Certificación Académica de Suficiencia en Investigación), Applicant: Osmany Gonzalez Reina, for admission to the Doctorate at PCF-UNAM for Semester 2020-2. Date: October 14, 2019.
6. Examiner **CASI** (Certificación Académica de Suficiencia en Investigación), Applicant: Ernesto Alfonso Pita, for admission to the Doctorate at PCF-UNAM for Semester 2020-1. Date: June 25, 2019.
7. **Predoctoral Examination** exam board, Classical Mechanics, Posgrado en Ciencias Físicas, UNAM, semester 2017-2, 12-23 June 2017.
8. **Predoctoral Examination** exam board, Quantum Mechanics, Posgrado en Ciencias Físicas, UNAM, semester 2014-2, 23 June – 4 July 2014.
9. External examiner, **degree requirement seminar**: “Same Sign Low Mass Dimuons”, Jorge Daniel Morales Mendoza, Departamento de Física y Matemáticas, Universidad Iberoamericana, México D.F. May 12, 2011.
10. External examiner, **degree requirement seminar**: “Installation of a cosmic ray muon detector”, Bruno Giovanni Candiani Vázquez, Departamento de Física y Matemáticas, Universidad Iberoamericana, México D.F. May 12, 2011.
11. External examiner, **degree requirement seminar**: “Searches for new physics: $Z' \rightarrow \mu + \mu^-$. Calculation of the cross section of $Z' \rightarrow \mu + \mu^-$ calculation of reconstruction efficiencies of the BMU at CDF”, Silvia Fernanda Psihas Olmedo, Departamento de Física y Matemáticas, Universidad Iberoamericana, México D.F. December 3, 2009.
12. External examiner, **degree requirement seminar**: “Start-up of a cosmic ray muon detector”, Bruno Giovanni Candiani Vázquez, Departamento de Física y Matemáticas, Universidad Iberoamericana, México D.F. December 3, 2009.

Tutoring

Postdoctoral

1. Advisor of postdoctoral fellow *Dr. Adiv González Muñoz*, ICN-UNAM, project “*PlomBoxear: A Device for Open Source Metrology to Fight Lead Contamination in Drinking Water*”, GCRF-GRTA, UK, 1 Jul 2020 - 31 Mar 2021.

2. Advisor of postdoctoral fellow *Dr. José Francisco Favela Pérez*, ICN-UNAM, project “*PlomBoxear: A Device for Open Source Metrology to Fight Lead Contamination in Drinking Water*”, GCRF-GRTA, UK, 1 Mar 2020 - 31 Dec 2021.
3. Advisor of postdoctoral fellow *Dr. José Francisco Favela Pérez*, ICN-UNAM, project “*Materia Oscura: Instrumentation Development to Observe the Invisible*”, GCRF, UK, 1 Mar 2019 - 29 Feb 2020.

Social Service

1. Social Service Tutor of *Julio César Sánchez Gutiérrez*, Physical Engineering, UAM-Azcapotzalco, 28 Mar 2022 - 30 Apr 2023.
2. Social Service Tutor of *José Plata Salas*, Physics, Facultad de Ciencias, UNAM, 4 Apr– 12 Nov 2018.
3. Social Service Tutor of *José Parra Méndez*, Physics, Facultad de Ciencias, UNAM, 6 Mar– 11 Oct 2017.
4. Social Service Tutor of *Jesús Felipe Alanís Manríquez*, Physics, Facultad de Ciencias, UNAM, 8 sep 2014 – 8 apr 2015.
5. Social Service Tutor of *Bryan Olmos Yáñez*, Physics, Facultad de Ciencias, UNAM, 2 May - 24 November 2015.
6. Social Service Tutor of *Diana Patricia Méndez Méndez*, Physics, Facultad de Ciencias, UNAM, 8 March - 9 December, 2013.
7. Social Service Tutor of *Samuel Pliego Caballero*, Mechanical Engineering, Facultad de Ingeniería, UNAM, 22 March - 22 October, 2013.
8. Social Service Tutor of *Guadalupe Moreno Granados*, Physics, Facultad de Ciencias, UNAM, 12 April - 15 November, 2013.
9. Social Service Tutor of *Marisol Chávez Estrada*, Physics, Facultad de Ciencias, UNAM, 25 July 2012 - 25 January, 2013.
10. Social Service Tutor of *Rubén Llarena Fernández de Lara*, Physics, Facultad de Ciencias, UNAM, 9 Marzo - 10 Septiembre 2012.
11. Social Service Tutor of *Irving E. Reyna Nolasco*, Physics, Facultad de Ciencias, UNAM, February 22 – September 3, 2012.
12. Social Service Tutor of *Esteban Martínez Vargas*, Physics, Facultad de Ciencias, UNAM, September 21, 2011 - March 21, 2012.
13. Social Service Tutor of *Youssef Sarkis Mobarak*, Physics, Facultad de Ciencias, UNAM, September 21, 2011- March 21, 2012.
14. Social Service Tutor of *Edgar Pérez Lezama*, Physics, Facultad de Ciencias, UNAM, October 20, 2010 - September 2, 2011.
15. Social Service Tutor of *Iker Loïc de Icaza Astiz*, Physics, Facultad de Ciencias, UNAM, December 10, 2010 - June 23, 2011.

Scholarships, fellowships and grants

1. *ITGAP Grant (International Travel Grant Award Program)*, American Physical Society, September 2012.
2. *Faculty Fellow*, Columbia University Physics Department, Sept 2002 through May 2003
3. *Complementary Scholarship*, Dirección General de Estudios de Posgrado, UNAM, November 2000 to May 2001.
4. *TELMEX Scholar*; Fundación TELMEX, Mexico D.F., October 1997 to May, 2001.

Honors and Awards

1. *Investigador Nacional, Nivel II (SNI II)*, National System of Researchers, CONACYT since Jan 2022.
2. *PRIDE level C*, DGAPA-UNAM, period 2016-2020, renov. 2021-2025.
3. *Acknowledgement for number of Citations in 2012*, Physics; DGAPA-UNAM, Nov 28, 2013.
4. *PRIDE level B*, DGAPA-UNAM, period 2011-2015.
5. *Investigador Nacional, Nivel I (SNI I)*, National System of Researchers, CONACYT, Jan 2011 – Dec 2021.

6. Elected to the *Graduate Student Association of Fermilab*, Oct 2005-Oct 2006.
7. *Gabino Barreda Medal* recipient, Facultad de Ciencias, UNAM, April 2002.
8. *TELMEX Scholarship*, for high academic achievements, October 1997 to May, 2001.
9. *Honorable Mention* in professional exam, undergrad. thesis defense, August 20, 1999.
10. *Leon M. Lederman Award in Physics*, HERTEL Foundation, April 1998
11. *Member of the Dean's List*, Central College, Pella Iowa, December 8, 1995.
12. Hig School Achievement Diploma, DGIRE- UNAM October 1994.
13. High School Diploma with *Honorable Mention* and *Golden Seal*, Centro Universitario México, July, 1994.

Presentations in international conferences and meetings

1. "Upgraded CONNIE experiment with Skipper-CCDs", XVIII International Conference on Topics in Astroparticle and Underground Physics (TAUP2023), University of Vienna, Vienna, Austria, August 29, 2023.
2. "CONNIE first results with Skipper-CCDs", EXCESS23@TAUP Workshop, University of Vienna, Vienna, Austria, August 26, 2023.
3. "Neutrino physics and dark matter searches with the Coherent CAPTAIN-Mills experiment", 7th Colombian Meeting on High Energy Physics (ComHEP 2022), Villa de Leyva, Boyacá, Colombia, November 29, 2022.
4. "Neutrino physics at a reactor with the CONNIE experiment", 1st Neutrinos en Colombia (NuCo 2021), Online event 29 July, 2021.
5. "A dark matter search with the MiniBooNE detector", XVI Mexican Workshop on Particles and Fields, Puerto Vallarta, Jalisco, Mexico, October 23-27, 2017.
6. "MiniBooNE-DM: a dark matter search in a proton beam dump", XV International Conference on Topics in Astroparticle and Underground Physics (TAUP-2017), Sudbury, ON, Canada, July 24-28, 2017.
7. "Latin American Contributions to the MiniBooNE Experiment", *Neutrinos-Latin America Workshop*, Fermilab April 27-28, 2016.
8. "The CONNIE experiment", *XV Mexican Workshop on Particles and Fields*, Mazatlán, Sinaloa, 2-6 November 2015.
9. "Status of the DAMIC direct dark matter search experiment", *XII Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2015)*, Vail, CO, United States, May 19-24, 2015.
10. "DAMIC: a search for Dark Matter with CCDs", *VIII International Conference on the Interconnections between Particle Physics and Cosmology (PPC 2014)*, Leon, Guanajuato, Mexico, June 23-27, 2014.
11. "Neutrinos and Dark Matter in Mexico", *4th International Workshop for the Design of the ANDES Underground Laboratory*, Unidad de Seminarios Dr. Ignacio Chávez, UNAM, México D.F. Jan 30-31, 2014.
12. "Neutrino oscillations and light dark matter searches with the MiniBooNE experiment", *19th International Symposium on Particles, Strings and Cosmology (PASCOS-2013)*, Taipei, Taiwan, 20-26 Nov, 2013.
13. "Recent results from MiniBooNE on neutrino oscillations", IX Latin American Symposium on High Energy Physics (SILAF AE 2012), 10-14 December, 2012, São Paulo, Brasil.
14. "Dark matter experiment with CCD detectors", 1st Workshop fo the Design of the ANDES Underground Labopatory, Buenos Aires, Argentina, April 11-14, 2011.
15. "Oscillations results from the MiniBooNE Experiment", VIII Latin American Symposium on High Energy Physics (SILAF AE 2010), Valparaíso, Chile, December 6-12, 2010.
16. "An Analytical treatment for Three Neutrino Oscillations in the Earth", sent Poster, presented by J.C. D'Olivo (coauthor) at the XXIV International Conference on Neutrino Physics and Astrophysics (Neutrino 2010), Athens, Greece, June 14-19, 2010.
17. "Magnus approximation for neutrino oscillations with three flavors in matter", International Conference on Topics on Astroparticle and Underground Physics (TAUP), Rome, Italy, July 1-5, 2009.
18. "Study of the Decay $\pi \rightarrow e\nu$ ", Sub-Atomic Physics Experiment Evaluation Committee (SAP-EEC) TRIUMF, Vancouver, B.C. Canada, July 12, 2008.

19. "Results of the MiniBooNE Experiment", PASCOS'08, Perimeter Institute for Theoretical Physics, Waterloo, Ontario, June 3, 2008.
20. "Results from MiniBooNE", Rencontres de Physique de la Vallée d'Aoste, La Thuile, Aosta Valley, Italy, February 25, 2008.
21. Poster: "The Combined neutrino oscillations fit for the BDT analysis in MiniBooNE", 40th Fermilab Users' Meeting, Fermi National Accelerator Laboratory, Batavia, IL, June 6-7, 2007.
22. "Neutrinos from the NuMI beamline in the MiniBooNE Detector", Particles and Nuclei International Conference (PANIC'05), Santa Fe NM, 23-30 October, 2005.
23. "BooNE", PANIC'05 Neutrino Satellite Meeting, Santa Fe NM, October 31, 2005.
24. Poster "The MiniBooNE Experiment"; XXIV Physics In Collision Conference; Boston University, Boston MA, June 24-29, 2004.
25. Poster "The MiniBooNE Experiment"; New Perspectives 2004; Fermilab, June 2, 2004.
26. "On the Implications of recent SNO results" VIII Mexican Workshop on Particles and Fields, Zacatecas Zac., Mexico, November 14-20, 2001.
27. Poster "The DAR Analysis of the LSND Experiment", International Workshop on observing Ultra-High Energy Cosmic Rays; Metepec, Puebla, Aug 2000.
28. Poster "An improvement in the data analysis of LSND"; XIX Symposium of Nuclear Physics; Oaxtepec, Morelos (Jan 10, 1999).

Presentations in National (Mexico) Conferences and meetings

1. "Research in Neutrino Physics and Dark Matter Searches with new generation CCD devices". XXX Escuela de Verano en Física (online event). Instituto de Ciencias Físicas / Instituto de Física, UNAM. 21 June, 2023.
2. "Looking for CEvNS of reactor antineutrinos with the CONNIE Experiment", XXXVII Meeting of the Division of Particles and Fields of the Mexican Physical Society, 12-14 Jun, 2023, CINVESTAV, Zacatenco, México.
3. "The Coherent CAPTAIN-Mills experiment and the search for the sterile neutrino", XIV Escuela de Física Fundamental, 2019 (EFF-2019), CINVESTAV Zacatenco, CDMX, 14 August 2019.
4. "Search for Dark Matter in the beam-dump of a proton beam with MiniBooNE", XXXI Meeting of the Division of Particles and Fields of the Mexican Physical Society, 24-26 May, 2017, CINVESTAV, Zacatenco, México.
5. "Status of the CONNIE experiment", Reunión General de la Red de Física de Altas Energías (Red FAE), Pachuca, Hidalgo, Nov 10-12, 2016.
6. Short course "Física de Neutrinos", 3 hr, IX Mexican School on Nuclear Physics, Instituto de Ciencias Nucleares, UNAM, June 22-23, 2015.
7. "Searching for light Dark Matter in a neutrino beam", XXVIII Meeting of the Division of Particles and Fields of the Mexican Physical Society, México D.F. 26-28 May, 2014.
8. "Neutrinos y búsquedas de Materia Oscura: caso Mexicano", 3er Congreso Nacional de la Red de Física de Altas Energías y Taller Temático de Vinculación "Física y Astrofísica de Partículas: Retos y oportunidades en México y Latinoamérica", Guanajuato, Gto. 23-28 Enero, 2014.
9. Course "Neutrino Physics", 5 hrs, VIII Escuela de Física Fundamental, Hermosillo, Sonora, México, 5-9 August, 2013.
10. "Experimentos en Física de Neutrinos", Workshop on Cosmic Ray Physics, Program Jóvenes hacia la Investigación, DGDC-UNAM, Instituto de Ciencias Nucleares, UNAM, México D.F., July 23-27, 2012.
11. "Resultados Experimentales de Oscilaciones de Neutrinos", VI Mexican School on Nuclear Physics, Instituto de Ciencias Nucleares, UNAM, June 24-25, 2009.
12. "Neutrino Oscillations, Review and Current Status", XXIII Meeting of the Division of Particles and Fields of the Mexican Physical Society, UNAM, Mexico City, May 20-22, 2009.
13. "Detección de neutrinos y materia oscura con gases nobles líquidos", 1er Congreso Nacional de la Red de Física de Altas Energías, Taxco Guerrero, México, March 4-7, 2009.
14. "Resultados Recientes de MiniBooNE sobre Oscilaciones de Neutrinos", XXI Meeting of the Division of Particles and Fields of the Mexican Physical Society, UNAM, Mexico City, June 21-22, 2007.

Specialized Seminars and Colloquia

1. CEvNS and new physics searches with CCD's: recent results and status of the CONNIE experiment", Nevis Seminar, Columbia University Nevis Laboratories, Irvington, NY, USA, 20 August, 2024.
2. "CCDs for the detection of neutrinos and the search for dark matter", Seminario Angel Dacal, Instituto de Física, UNAM, 14 March, 2023.
3. "The Coherent CAPTAIN-Mills experiment at Los Alamos", Seminar of the Centro de Investigación en Física Fundamental (CIFFU), Benemérita Universidad Autónoma de Puebla, 8 November, 2022.
4. "The Coherent CAPTAIN-Mills experiment and the search for sterile neutrinos", Colloquium of the Graduate Program in Physics, Instituto de Ciencias Nucleares, UNAM, 5 November, 2019.
5. "Measurement of monoenergetic neutrinos from Kaon decay at rest", Seminar of the Academic Field on Particles, Fields and General Relativity, Facultad de Ciencias Físico-Matemáticas, Benemérita Universidad Autónoma de Puebla, Puebla, Pue. 15 August 2018.
6. "Measurement of Charged-Current interactions of monoenergetic neutrinos with the MiniBooNE detector", High Energy Physics Seminar, Department of Physics, CINVESTAV Zacatenco, 3 July, 2018.
7. "Measurement of Charged-Current interactions of monoenergetic neutrinos with the MiniBooNE detector", High Energy Physics Seminar, Instituto de Física, UNAM 16 May, 2018.
8. "Searches for low-mass dark matter with DAMIC and MiniBooNE", Dark Matter Day, Instituto de Física, UNAM, October 31, 2017.
9. "Dark matter detection: a bridge between technology and basic science", Conference series for the XXXIX anniversary of the FCByT, Universidad Autónoma de Tlaxcala, 12 September, 2017.
10. "Dark matter search with an accelerator and a neutrino detector", Research Colloquium, Instituto de Ciencias Nucleares, UNAM. June 9, 2017.
11. "Dark matter and neutrinos with CCD sensors", *Almuerzeminario*, Instituto de Física UNAM, Oct 4 2016.
12. "What is a neutrino?", Coloquio de Divulgación del Instituto de Ciencias Nucleares, UNAM, 25 February, 2016.
13. "DAMIC: búsqueda de materia oscura con sensores CCD", Colloquium, Institute of Astronomy, UNAM, 9 December 2015.
14. "Física de Neutrinos: masas y oscilación", Seminario del grupo de Partículas Elementales y Cosmología (PEyCOS), Universidad del Atlántico, Barranquilla, Colombia, 19 and 26 November, 2015.
15. "Dark matter search with CCD devices: the DAMIC experiment". Seminario Manuel Sandoval Vallarta, Instituto de Física, UNAM, September 19, 2014.
16. "Búsquedas de oscilaciones de neutrinos y antineutrinos con el experimento MiniBooNE", Manuel Sandoval Vallarta Seminar, Instituto de Física, UNAM, November 9, 2012.
17. "Búsquedas de oscilaciones de neutrinos con el experimento MiniBooNE", Seminar of the High Energy Physics group, Department of Physics, CINVESTAV-IPN, México D.F., May 29, 2012.
18. "Neutrinos Faster Than Light? Comments on the OPERA result", Colloquium of the *Instituto de Ciencias Físicas, UNAM, Cuernavaca Morelos*, November 30, 2011, y Colloquium of the *Instituto de Ciencias Nucleares, UNAM, Ciudad Universitaria, México D.F.*, December 1st, 2011.
19. "Las búsquedas de oscilaciones de neutrinos de MiniBooNE", Colloquium of the Department of Physics, CINVESTAV-IPN, México D.F., April 27, 2011.
20. "The MiniBooNE neutrino oscillations search ", TRIUMF special seminar, Vancouver, B.C., September 27, 2007.
21. "Active Neutrino Oscillations and the SNO NC measurement", Department of Physics Columbia University, Particle Physics Seminar, February 2003.

Outreach talks, colloquia and related activities

1. "The Department of High Energy Physics at ICN", Outreach event "Creando#FuturosICN", Unidad de Docencia, Instituto de Ciencias Nucleares, June 12, 2023.

2. "Neutrinos and Dark Matter at the Department of High Energy Physics of ICN", Virtual seminar Explorer Teachers ICN (PAUTA), 8 December, 2022.
3. "The Department of High Energy Physics at ICN", Outreach event "Creando#FuturosICN", Unidad de Docencia, Instituto de Ciencias Nucleares, August 26, 2022.
4. "The Marvel Universe: ¿How far is it possible?", Online panel conversation, Fiesta de las Ciencias y Humanidades 2022, Dirección General de Divulgación de la Ciencia, UNAM, October 22, 2022.
5. "Dentro de un mar de neutrinos", Coloquio de Divulgación del Instituto de Ciencias Nucleares (online), UNAM, 27 August, 2021.
6. "La oscuridad del Universo desde la Física", Jornadas Universitarias en línea (online), Universidad La Salle Pachuca, Pachuca, Hidalgo, 12 November, 2020.
7. "LABChico: el primer laboratorio subterráneo de México en Hidalgo", 2a Jornada La Ciencia de LABChico, Universidad La Salle, Pachuca, Hidalgo, 26 September, 2019.
8. "Un laboratorio para estudiar baja radioactividad y rayos cósmicos en Mineral del Chico", 1a Jornada La Ciencia de LABChico, Mineral del Chico, Hidalgo, 22 February, 2019.
9. "Neutrinos: 1, 2, 3 ... ¿and more?", Open Doors Day, Instituto de Ciencias Nucleares, UNAM, 18 October 2018.
10. "Hunting for dark matter with digital cameras: the DAMIC experiment at SNOLAB", Outreach Colloquium , Instituto de Ciencias Nucleares, August 21, 2015.
11. Interview, program "Hoy por hoy en la Ciencia", Universum, W-Radio, November 29, 2011.
12. "Neutrinos Faster than light?" Online *Chat*, Internet portal of newspaper El Universal, DGDC-UNAM, October 4, 2011.

Schools and workshops attended

1. *Mini-Workshop on Neutrino Physics, Instituto de Física, UNAM, 8-10 November 2017.*
2. *Workshop Towards a kg-size dark matter detector with CCDs, University of Chicago, Jan 25-27, 2017.*
3. *Mini-Dark Matter Worskshop, Instituto de Física, UNAM, Nov 7-9, 2016*
4. *Neutrinos-Latin America Workshop, Fermilab, April 27-28, 2016.*
5. *Taller de Integración de Física Teórica-Experimental de la RedFAE, León, Guanajuato, Aug 27-29, 2015.*
6. *4th International Workshop for the Design of the ANDES Underground Laboratory, Unidad de Seminarios Dr. Ignacio Chávez, UNAM, México D.F. January 30-31, 2014.*
7. *1st International Workshop for the Design of the ANDES Underground Laboratory, Centro Atómico Constituyentes, Buenos Aires, Argentina, April 11-14, 2011.*
8. *SLAC GEANT4 Tutorial, FCFM Benemérita Universidad Autónoma de Puebla, June 14-18, 2010.*
9. *Workshop Towards neutrino Technologies, Trieste, Italy, July 13-18, 2009.*
10. *Taller de Introducción a la Instrumentación en Física Experimental de Altas Energías, Universidad Iberoamericana, México City, April 2-3, 2009.*
11. *School on Instrumentation for Elementary Particle Physics ICFA 2001, National Accelerator Centre, Cape Town, South Africa. March 26 to April 6, 2001.*
12. *SLAC Summer Institute, Stanford University, August 2-13, 2004.*

Event organization experience and support activities

1. Chair of the Department of High Energy Physics, Instituto de Ciencias Nucleares, UNAM, 16 August 2018 to date.
2. Seminar coordinator, Department of High Energy Physics, Instituto de Ciencias Nucleares, UNAM, Aug 2010 to December 2023.

3. Member of the organizer committee of the 3rd *Jornada: La ciencia de LABChico*, Hotel El Paraíso (chgd. from Pabellón Artesanal) Mineral del Chico, Hidalgo, 13 Marzo, 2020.
4. Member of the organizer committee of the 2nd *Jornada: La ciencia de LABChico*, Ejido La Estanzuela, Mineral del Chico, Hidalgo, 27 September, 2019.
5. Member of the organizer committee of the 1st *Jornada: La ciencia de LABChico*, Hotel El Paraíso, Mineral del Chico, Hidalgo, 22 February, 2019.
6. Chair of the Local Organizing Committee of the XXXII Annual Meeting of the Division of Particles and Fields of the Mexican Physical Society, Instituto de Ciencias Nucleares, UNAM, 28-30 May 2018.
7. Member of the organizing committee and tutor/judge for the contest “*Veranos Científicos en Laboratorios Extranjeros 2019*” organized by the Division of Particles and Fields of the Mexican Physical Society, Departamento de Física y Matemáticas, Universidad Iberoamericana (IBERO), 13-15 December 2018.
8. Member of the organizing committee and tutor/judge for the contest “*Veranos Científicos en Laboratorios Extranjeros 2018*” organized by the Division of Particles and Fields of the Mexican Physical Society, FES-UNAM Acatlán. 13-15 December 2017.
9. Member of the organizing committee and tutor/judge for the contest “*Veranos Científicos en Laboratorios Extranjeros 2016*” organized by the Division of Particles and Fields of the Mexican Physical Society, Facultad de Ciencias Físicas y Matemáticas, Universidad Autónoma de Chiapas, Tuxtla Gtz. Chiapas. 13-15 November 2015.
10. Member of the organizing committee “*Workshop on Integration of Theoretical and Experimental Physics of the HEP Network (Red-FAE)*”, Red Temática de Investigación CONACYT en Física de Altas Energías (Red-FAE), Guanajuato, Gto. 27-29 de agosto, 2015.
11. Member of the organizing committee and tutor/judge for the contest “*Veranos Científicos en Laboratorios Extranjeros 2015*” organized by the Division of Particles and Fields of the Mexican Physical Society, Facultad División de Ciencias e Ingenierías, Universidad de Guanajuato, León, Gto. 11-13 December 2014.
12. Member of the organizing committee for the *4th International Workshop for the Design of the ANDES Underground Laboratory*, Unidad de Seminarios Dr. Ignacio Chávez, UNAM, México D.F. Jan 30-31, 2014.
13. Member of the organizing committee Thematic Workshop: “*Particle Physics and Astrophysics: challenges and opportunities in Mexico and Latin America*”, Guanajuato, Gto. 23-28 Jan, 2014.
14. Member of the national organizing committee and tutor/judge for the contest “*Veranos Científicos en Laboratorios Extranjeros 2014*” organized by the Division of Particles and Fields of the Mexican Physical Society (DPyC-SMF), Centro de Ciencias e Ingenierías, Universidad de Guadalajara, Guad. Jalisco, January 9-11, 2014.
15. Member of the national organizing committee and tutor/judge for the contest “*Veranos Científicos en Laboratorios Extranjeros 2013*” organized by the Division of Particles and Fields of the Mexican Physical Society (DPyC-SMF), Universidad Iberoamericana, Mexico City, January 10-12, 2013.
16. Member of the organizing committee for the *II CINVESTAV-UNAM Symposium “Particles and neutrinos in an astrophysical context”*, Oct 8-9, 2012, Instituto de Ciencias Nucleares, UNAM, Distrito Federal, México.
17. Member of the national organizing committee and tutor/judge in the contest “*Veranos Científicos en Laboratorios Extranjeros 2012*” organized by the Division of Particles and Fields of the Mexican Physical Society (DPyC-SMF), Universidad Autónoma de Sinaloa, Culiacán, Sin., 8-10 december 2011.
18. Head of the local and national organizing committees of the contest “*Veranos Científicos en Laboratorios Extranjeros 2011*” organized by the Division of Particles and Fields of the Mexican Physical Society (DPyC-SMF), Instituto de Ciencias Nucleares and Facultad de Ciencias, UNAM, 15-17 December, 2010.
19. Member of the organizing committee for the *XIV Mexican School on Particles and Fields*, Morelia, Mich. Nov. 8-12, 2010
20. Member of the national organizing committee and tutor/judge in the contest “*Veranos Científicos en Laboratorios Extranjeros 2010*” organized by the Division of Particles and Fields of the Mexican Physical Society (DPyC-SMF), Benemérita Universidad Autónoma de Puebla, Puebla, Pue., 9-12 december 2009.
21. Member of the organizing committee for the *XII Mexican Workshop on Particles and Fields*, Mazatlán, Sin. Nov 9-14, 2009.
22. Poster Session of the 2006 Fermilab Users' Meeting, May 31, 2006. New Perspectives 2006, Fermi National Accelerator Laboratory, June 2-3, 2006.

23. Staff member, NUFAC'T'03, 5th International Workshop on Neutrino Factories & Superbeams. Columbia University, New York. 5-11 June 2003.

Publications in refereed journals

1. "Testing meson portal dark sector solutions to the MiniBooNE anomaly at the Coherent CAPTAIN Mills experiment". A. A. Aguilar-Arevalo, S. Biedron, J. Boissevain, M. Borrego, L. Bugel, M. Chavez-Estrada, J. M. Conrad, R. L. Cooper, A. Diaz, J. R. Distel, J. C. D'Olivo, E. Dunton, B. Dutta, D. Fields, J. R. Gochanour, M. Gold, E. Guardincerri, E. C. Huang, N. Kamp, D. Kim, K. Knickerbocker, W. C. Louis, J. T. M. Lyles, R. Mahapatra, S. Maludze, J. Mirabal, D. Newmark, P. deNiverville, V. Pandey, D. Poulson, H. Ray, E. Renner, T. J. Schaub, A. Schneider, M. H. Shaevitz, D. Smith, W. Sondheim, A. M. Szelc, C. Taylor, A. Thompson, W. H. Thompson, M. Tripathi, R. T. Thornton, R. Van Berg, and R. G. Van de Water. [Coherent CAPTAIN-Mills Collaboration]. **Published** in Phys. Rev. D 109, 095017 (2024)
2. "Confirmation of the spectral excess in DAMIC at SNOLAB with skipper CCDs", A. Aguilar-Arevalo, I. Arnquist, N. Avalos, L. Barak, D. Baxter, X. Bertou, I. M. Bloch, A. M. Botti, M. Cababie, G. Cancelo, N. Castelló-Mor, B. A. Cervantes-Vergara, A. E. Chavarria, J. Cortabitarte-Gutiérrez, M. Crisler, J. Cuevas-Zepeda, A. Dastgheibi-Fard, C. De Dominicis, O. Deligny, A. Drlica-Wagner, J. Duarte-Campderros, J. C. D'Olivo, R. Essig, E. Estrada, J. Estrada, E. Etzion, F. Favela-Perez, N. Gadola, R. Gaïor, S. E. Holland, T. Hossbach, L. Iddir, B. Kilminster, Y. Korn, A. Lantero-Barreda, I. Lawson, S. Lee, A. Letessier-Selvon, P. Loaiza, A. Lopez-Virto, S. Luoma, E. Marrufo-Villalpando, K. J. McGuire, G. F. Moroni, S. Munagavalasa, D. Norcini, A. Orly, G. Papadopoulos, S. Paul, S. E. Perez, A. Piers, P. Privitera, P. Robmann, D. Rodrigues, N. A. Saffold, S. Scorza, M. Settimo, A. Singal, R. Smida, M. Sofo-Haro, L. Stefanazzi, K. Stifter, J. Tiffenberg, M. Traina, S. Uemura, I. Vila, R. Vilar, T. Volansky, G. Warot, R. Yajur, T-T. Yu, and J-P. Zopounidis [DAMIC, DAMIC-M and SENSEI Collaborations]. **Published** in Phys. Rev. D 109, 062007 (2024)
3. "Searching for millicharged particles with 1 kg of Skipper-CCDs using the NuMI beam at Fermilab", Santiago Perez, Dario Rodrigues, Juan Estrada, Roni Harnik, Zhen Liu, Brenda A. Cervantes-Vergara, Juan Carlos D'Olivo, Ryan D. Plestid, Javier Tiffenberg, Tien-Tien Yu, Alexis Aguilar-Arevalo, Fabricio Alcalde-Bessia, Nicolás Avalos, Oscar Baez, Daniel Baxter, Xavier Bertou, Carla Bonifazi, Ana Botti, Gustavo Cancelo, Nuria Castelló-Mor, Alvaro E. Chavarria, Claudio R. Chavez, Fernando Chierchie, Juan Manuel De Egea, Cyrus Dreyer, Alex Drlica-Wagner, Rouven Essig, Ezequiel Estrada, Erez Etzion, Paul Grylls, Guillermo Fernandez-Moroni, Marivi Fernández-Serra, Santiago Ferreyra, Stephen Holland, Agustín Lantero Barreda, Andrew Lathrop, Ian Lawson, Ben Loer, Steffon Luoma, Edgar Marrufo Villalpando, Mauricio Martinez Montero, Kellie McGuire, Jorge Molina, Sravan Munagavalasa, Danielle Norcini, Alexander Piers, Paolo Privitera, Nathan Saffold, Richard Saldanha, Aman Singal, Radomir Smida, Miguel Sofo-Haro, Diego Stalder, Leandro Stefanazzi, Michelangelo Traina, Yu-Dai Tsai, Sho Uemura, Pedro Ventura, Rocío Vilar Cortabitarte and Rachana Yajur [Oscura Collaboration]. **Published** in JHEP 02, 072 (2024)]
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