

**PERSONAL DATA:**

Mexican. Birth date Nov 8, 1975. E-mail: [alexis@nucleares.unam.mx](mailto:alexis@nucleares.unam.mx), Tel. (+52-55) 5622-4669.

**CURRENT EMPLOYMENT INFORMATION:**

Titular Researcher, *Investigador Titular A*, Department of High energy Physics, Instituto de Ciencias Nucleares (ICN), UNAM.

**ACADEMIC BACKGROUND:**

Ph.D: 2008, *Columbia University, New York, U.S.A.*

M.Phil: 2004, *Columbia University, New York, U.S.A.*

Maestría en Ciencias: 2002, *Posgrado en Ciencias Físicas (PCF) Universidad Nacional Autónoma de México.*

Licenciatura en Física: 1999, *Facultad de Ciencias, Universidad Nacional Autónoma de México*

**EMPLOYMENT HISTORY**

Department Chair, *Departamento de Física de Altas Energías*, ICN-UNAM, 16 Aug 2018 to date.

Investigador Titular A T.C., *Departamento de Física de Altas Energías*, ICN-UNAM, 7 May 2015 to date.

Investigador Asociado C T.C., *Departamento de Física de Altas Energías*, ICN-UNAM, Feb 2009 - 7 May 2015.

Postdoctoral Research Associate, PIENU, *TRIUMF*, Vancouver, Canada, Jan – Dec 2008.

Research Assistant, *Columbia Neutrino Group, Physics. Dept. Columbia University*. Sep 2002-Dec 2007.

**RESEARCH INTERESTS**

Direct dark matter searches, neutrino oscillation experiments, precision studies of rare meson decays.

**RESEARCH PROJECTS**

P.I. project, “Dark matter and neutrino physics in the CCM and CONNIE experiments” PAPIIT-UNAM No.IN104723, Jan 2023 - Dec 2025.

P.I. “Neutrino physics via the coherent elastic scattering with nuclei” PAPIIT-UNAM No.IT100420, Jan 2020 - Dec 2022.

Participant, “*PlomBox: open source device to fight lead contamination in drinking water*”, GCRF, UK, Oct 2019 - Mar 2021.

Participant, “*Materia Oscura: Instrumentation Development to observe the invisible*”, GCRF, UK, Apr 2018 - Mar 2020.

Participant, “*Data analysis for neutrino phenomenology*”, Impacto Caribe, U. del Atlántico, Colombia Nov 2015 – Jun 2017.

Participant, “*Academic Network for Underground Experiments*”, DGECI-UNAM, Jun 2014 - Dec 2015.

P.I., “*Neutrino and dark matter detector development*”, PAPIIT-UNAM No. IB100413, Apr 2013 - Apr 2015.

P.I., “*R&D on antineutrino detectors for reactor monitoring*” SEP-CONACYT CB-2009-131598, Apr 2010 -Oct 2014.

Participant in 2 projects PAPIIT DGAPA-UNAM, 1 project CB-CONACYT

Participant, “*CONACYT Thematic Research Network on High Energy Physics*”, CONACYT, since 2009.

**COLLABORATIONS**

LSND Collaboration (1998-2001); MiniBooNE Collaboration (since 2003); PIENU Collaboration (since 2008); DAMIC Collaboration (since 2013); CONNIE Collaboration (since 2014); Coherent-CAPTAIN-Mills Collaboration (since 2018); Oscura Collaboration (since 2020).

**PUBLICATION SUMMARY**

- 72 articles in international peer-reviewed journals: 18 in *Phys. Rev. Lett.*; 30 in *Phys. Rev. D*; 1 in *Phys. Rev. A*; 3 in *Phys.Lett. B*; 5 in *Nucl. Instr. Meth. in Phys. Res. A.*; 5 in *JINST*; 3 in *JHEP*; 2 in *Adv. High Energy Phys.*; 1 in *Sensors*; 1 in *Rept. Prog. Phys.*; 1 in *Eur. Phys. J. P.*; 1 in *IEEE-Trans. Nucl. Sci.*; 1 in *Appl.Water.Sci.*

- 1 article in National (Mexican) peer-reviewed Journals (*Series del Instituto de Ingeniería*)

- 1 article for the general public (*Revista Cubana de Física*)

- 36 articles in Conference Proceedings.

Total number of citations to peer reviewed articles over 7500 (source inSPIRE-HEP, *hHEP* index: 32).

**TEACHING EXPERIENCE**

Teacher of 14 undergraduate level courses (12 at UNAM and 2 at ITAM).

Teacher of 7 graduate courses, and 1 prep. course for enrollment, *Graduate Program of Physical Sciences (PCF)*, UNAM.

**TUTORING**

Director of 1 PhD thesis, 3 Masters theses, 1 Protocol for the Doctorate, and 8 Undergraduate theses (all completed).

Social Service Tutor of: 13 Physics undergraduate students from UNAM; 1 Mechanical Engineering student from UNAM; 1

Physical Engineering student from UAM-Azcapotzalco.

**PARTICIPATION IN EXAMINATION BOARDS AND JURIES**

Jury in 5 PhD exams (1 CINVESTAV, 3 PCF-UNAM, 1 Astro-UNAM). Jury in 19 Masters exams (PCF-UNAM). Jury in 18

undergraduate exams (UNAM). Jury in 10 PhD Candidacy exam (PCF-UNAM). Examiner of 2 predoctoral examinations (PCF-

UNAM). Examiner of 4 *Trabajos de Titulación* (Depto. de Física y Matemáticas, Universidad Iberoamericana).

**SCHOLARSHIPS, FELLOWSHIPS AND GRANTS**

ITGAP (*International Travel Grant Award Program*), American Physical Society, Sep 2012.

*Faculty Fellow*, Columbia University Physics Department, Sep 2002 - May 2003.

*Complementary Scholarship*, DGEP-UNAM, November 2000 – May 2001.

*TELMEX Scholarship*, Fundación TELMEX, October 1997 - May 2001.

**DISTINCTIONS AND AWARDS**

National Researcher Level II (SNI-II), Sistema Nacional de Investigadores, by CONACYT, since Jan 2022.

PRIDE level C (2016-2020 and 2021-2025), PRIDE level B (2012-2016), by DGAPA-UNAM.

Acknowledgement for number of citations in 2012, area of the Physical Sciences; by DGAPA-UNAM, Nov 28, 2013.

National Researcher Level I (SNI-I), Sistema Nacional de Investigadores, by CONACYT, Jan 2011-Dec 2021.

Elected Fermilab Graduate Student Association Officer, Oct 2005–Oct 2006

Gabino Barrera Medal, Facultad de Ciencias, UNAM, Apr 2002.

Honorable Mention, professional exam, undergraduate thesis, 20 Aug 1999.

Leon M. Lederman Award in Physics, Fundación HERTEL, Apr 1998

**SUMMARY OF PRESENTATIONS IN CONFERENCES AND OTHER VENUES**

Speaker in 28 international conferences, 14 national (Mexico) conferences, 21 specialized seminars and colloquia, and 12 outreach talks and activities.

**OTHER**

Reviewer of research proposals: CONACYT (Mexico) (x10), DGAPA-PAPIIT (UNAM) (x6), FONDECYT (Chile) (x1).

*Review Editor, Frontiers in High Energy Physics and Astrophysics*, Nov 2013 – Aug 2016

Member of organizing committee of 9 national and 3 international academic events.