Maria Concepcion Gonzalez-Garcia
Curriculum Vitae

Position

Research Professor (On leave while at Stony Brook)
ICREA-Departament de Fisica Quantica i Astrofisica
University of Barcelona
Av/Diagonal 647, 08028 Barcelona, Spain
Professor (On leave while at ICREA)
C.N. Yang Institute for Theoretical Physics
State University of New York
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Education

Universidad de Valencia
B.Sc. in Physics (1987)
M.Sc. in Physics (1989)
Ph.D. in Theoretical Physics (1991)
(Extraordinary Doctorate Award, U. Valencia)

Employment

Associate Professor
YITP, SUNY Stony Brook, 2004–2012 (On leave while at ICREA)
Assistant Professor
YITP, SUNY Stony Brook, Sep 2001-Dec 2003 (on leave till 2003)
Research Professor
Instituto de Fisica Corpuscular(IFIC), Valencia, Spain, 2006– (on leave)
Senior Research Scientist
IFIC, Valencia, Spain, 2002–2006 (on leave)
Visiting Researcher (Marie Curie Fellow)
Theory Division, CERN, 2001-2002
Tenured Scientist
IFIC, Valencia, Spain, 1993-2001
Research Associate (Fellow)
Theory Division, CERN, 1994-1996
Visiting Assistant Professor
Physics Department, University of Wisconsin 1993-1994
Research Associate
University of Wisconsin 1991-1993

Publications

Published Research Articles

1. "Review of particle physics," S. Navas *et al.* [Particle Data Group], Phys. Rev. D **110**, no.3, 030001 (2024)

2. "Solar neutrinos and leptonic spin forces," S. Ansarifard, M. C. Gonzalez-Garcia, M. Maltoni and J. P. Pinheiro, JHEP **07**, 172 (2024)

3. "Dimension-eight operator basis for universal standard model effective field theory," T. Corbett, J. Desai, O. J. P. Eboli and M. C. Gonzalez-Garcia, Phys. Rev. D **110**, no.3, 033003 (2024)

4. "Status of direct determination of solar neutrino fluxes after Borexino," M. C. Gonzalez-Garcia, M. Maltoni, J. P. Pinheiro and A. M. Serenelli, JHEP **02** (2024), 064

5. "Bounds on quartic gauge couplings in HEFT from electroweak gauge boson pair production at the LHC," O. J. P. Eboli, M. C. Gonzalez-Garcia and M. Martines, Phys. Rev. D **109** (2024) no.3, 033007

6. "Global constraints on non-standard neutrino interactions with quarks and electrons," P. Coloma, M. C. Gonzalez-Garcia, M. Maltoni, J. P. Pinheiro and S. Urrea, JHEP **08** (2023), 032

7. "Feebly-interacting particles: FIPs 2022 Workshop Report," C. Antel, M. Battaglieri, J. Beacham, C. Boehm, O. Buchmüller, F. Calore, P. Carenza, B. Chauhan, P. Cladè and P. Coloma, *et al.* Eur. Phys. J. C **83** (2023) no.12, 1122

8. 'Impact of dimension-eight SMEFT operators in the electroweak precision observables and triple gauge couplings analysis in universal SMEFT," T. Corbett, J. Desai, O. J. P. Éboli, M. C. Gonzalez-Garcia, M. Martines and P. Reimitz, Phys. Rev. D **107** (2023) no.11, 115013

9. "On neutrino-mediated potentials in a neutrino background," D. Blas, I. Esteban, M. C. Gonzalez-Garcia and J. Salvado, JHEP **04** (2023), 039

10. "Constraining new physics with Borexino Phase-II spectral data," P. Coloma, M. C. Gonzalez-Garcia, M. Maltoni, J. P. Pinheiro and S. Urrea, JHEP **07**, 138 (2022).

11. "Bounds on new physics with data of the Dresden-II reactor experiment and COHERENT," P. Coloma, I. Esteban, M. C. Gonzalez-Garcia, L. Larizgoitia, F. Monrabal and S. Palomares-Ruiz, JHEP **05**, 037 (2022).

12. "Electroweak Higgs effective field theory after LHC run 2," O. J. P. Eboli, M. C. Gonzalez-Garcia and M. Martines, Phys. Rev. D **105** (2022) no.5, 053003

13. "NuFIT: Three-Flavour Global Analyses of Neutrino Oscillation Experiments," M. C. Gonzalez-Garcia, M. Maltoni and T. Schwetz, Universe **7** (2021) no.12, 459

14. "Electroweak legacy of the LHC run II," E. d. Almeida, A. Alves, O. J. P. Éboli and M. C. Gonzalez-Garcia, Phys. Rev. D **105** (2022) no.1, 013006

15. "Unitarity constraints on ALP interactions," I. Brivio, O. J. P. Éboli and M. C. Gonzalez-Garcia, Phys. Rev. D **104** (2021) no.3, 035027

16. "Neutrino oscillation constraints on U(1)' models: from non-standard interactions to long-range forces," P. Coloma, M. C. Gonzalez-Garcia and M. Maltoni, JHEP **01**, 114 (2021)

17. "Impact of fermionic operators on the Higgs width measurement," E. d. Almeida, O. J. P. Éboli and M. C. Gonzalez-Garcia, Phys. Rev. D **102**, 113002 (2020)

18. "The fate of hints: updated global analysis of three-flavor neutrino oscillations," I. Esteban, M. C. Gonzalez-Garcia, M. Maltoni, T. Schwetz and A. Zhou, JHEP **09**, 178 (2020)

19. "Determining the nuclear neutron distribution from Coherent Elastic neutrino-Nucleus Scattering: current results and future prospects," P. Coloma, I. Esteban, M. C. Gonzalez-Garcia and J. Menendez, JHEP **08**, no.08, 030 (2020)

20. "Unitarity constraints on anomalous quartic couplings," E. d. Almeida, O. J. P. Éboli and M. C. Gonzalez–Garcia, Phys. Rev. D **101**, no.11, 113003 (2020)

21. "Improved global fit to Non-Standard neutrino Interactions using COHERENT energy and timing data," P. Coloma, I. Esteban, M. C. Gonzalez-Garcia and M. Maltoni, JHEP **02**, 023 (2020)

22. "Coherent Elastic Neutrino-Nucleus Scattering at the European Spallation Source," D. Baxter, J. I. Collar, P. Coloma, C. E. Dahl, I. Esteban, P. Ferrario, J. J. Gomez-Cadenas, M. C. Gonzalez-Garcia, A. R. L. Kavner and C. M. Lewis, *et al.* JHEP **02**, 123 (2020)

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24. "On the Determination of Leptonic CP Violation and Neutrino Mass Ordering in Presence of Non-Standard Interactions: Present Status," I. Esteban, M. C. Gonzalez-Garcia and M. Maltoni, JHEP **1906**, 055 (2019)

25. 'Electroweak Sector Under Scrutiny: A Combined Analysis of LHC and Electroweak Precision Data," E. da Silva Almeida, A. Alves, N. Rosa Agostinho, O. J. P. Éboli and M. C. Gonzalez-Garcia, Phys. Rev. D **99**, no. 3, 033001 (2019)

26. "Global analysis of three-flavour neutrino oscillations: synergies and tensions in the determination of $\theta_2 3, \delta_C P$, and the mass ordering," I. Esteban, M. C. Gonzalez-Garcia, A. Hernandez-Cabezudo, M. Maltoni and T. Schwetz, JHEP **1901**, 106 (2019)

27. 'Effect of Fermionic Operators on the Gauge Legacy of the LHC Run I," A. Alves, N. Rosa-Agostinho, O. J. P. Éboli and M. C. Gonzalez–Garcia, Phys. Rev. D **98**, no. 1, 013006 (2018)

28. "Updated Constraints on Non-Standard Interactions from Global Analysis of Oscillation Data," I. Esteban, M. C. Gonzalez-Garcia, M. Maltoni, I. Martinez-Soler and J. Salvado, JHEP **1808**, 180 (2018)

29. "Neutrino Discovery Limit of Dark Matter Direct Detection Experiments in the Presence of Non-Standard Interactions," M. C. Gonzalez-Garcia, M. Maltoni, Y. F. Perez-Gonzalez and R. Zukanovich Funchal, JHEP **1807**, 019 (2018)

30. "Helioseismic and Neutrino Data Driven Reconstruction of Solar Properties," N. Song, M. C. Gonzalez-Garcia, F. L. Villante, N. Vinyoles and A. Serenelli, Mon. Not. Roy. Astron. Soc. **477**, no. 1, 1397 (2018)

31. "LHC Run I Bounds on Minimal Lepton Flavour Violation in Type-III See-saw: A Case Study," N. R. Agostinho, O. J. P. Eboli and M. C. Gonzalez-Garcia, JHEP **1711**, 118 (2017)

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34. "Curtailing the Dark Side in Non-Standard Neutrino Interactions," P. Coloma, P. B. Denton, M. C. Gonzalez-Garcia, M. Maltoni and T. Schwetz, JHEP **1704**, 116 (2017)

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36. "Updated fit to three neutrino mixing: exploring the accelerator-reactor complementarity" I. Esteban, M. C. Gonzalez-Garcia, M. Maltoni, I. Martinez-Soler and T. Schwetz. JHEP **1701**, 087 (2017)

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48. "Statistical tests of sterile neutrinos using cosmology and short-baseline data," J. Bergström, M. C. Gonzalez-Garcia, V. Niro and J. Salvado, JHEP **1410** (2014) 104

49. "CP violation with a dynamical Higgs," M. B. Gavela, J. Gonzalez-Fraile, M. C. Gonzalez-Garcia, L. Merlo, S. Rigolin and J. Yepes, JHEP **1410** (2014) 44

50. "Higgs ultraviolet softening," I. Brivio, O. J. P. Éboli, M. B. Gavela, M. C. Gonzalez-Garcia, L. Merlo and S. Rigolin, JHEP **1412** (2014) 004

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57. "Robust Determination of the Higgs Couplings: Power to the Data", T. Corbett, O. J. P. Eboli, J. Gonzalez-Fraile and M. C. Gonzalez-Garcia, Phys. Rev. D **87**, 015022 (2013)

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66. "Early Universe effective theories: The Soft Leptogenesis and R-Genesis Cases," C. S. Fong, M. C. Gonzalez-Garcia, E. Nardi, JCAP **1102**, 032 (2011).

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69. "Robust Cosmological Bounds on Neutrinos and their Combination with Oscillation Results," M. C. Gonzalez-Garcia, M. Maltoni, J. Salvado, JHEP **1008**, 117 (2010).

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Impact

In the SPIRES data basis
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– which is the one commonly used in my research area – these publications have received a total of **32616 citations by Dec 5th 2024**. The corresponding **h-factor is 77**.

In Google Scholar data basis
`https://scholar.google.com/citations?user=U0wFdiIAAAAJ&hl=en`
the articles published in the listed journals have received a total of **35202 citations by Dec 5th 2024 (20040 since 2019)**. The corresponding **h-factor is 78**

Research Grants

- **PID2022-136224NB-C21**
  Center: Institut Ciences del Cosmos, Universitat de Barcelona
  Funding Agency: MICIU/AEI
  PI: **M.C.Gonzalez-Garcia**
  Duration: 2023-2026

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  Center: U. Valencia
  PI Coordinator: P. Hernandez
  PI (Barcelona Node): **M.C. Gonzalez-Garcia**
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  Center: Facultat de Fisica, Universitat de Barcelona
  PI: J. Russo
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  Center: Universidad Autonoma de Madrid
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  PI Coordinator: B. Gavela
  PI (Barcelona Node): **M.C. Gonzalez-Garcia**
  Duration: 2012-2016

- **2017SGR929**
  Funding Agency: CUR Generalitat de Catalunya
  Center: Facultat de Fisica, Universitat de Barcelona
  PI: J. Russo
  Duration: 2017-2019

- **Unidad de Excelencia 'Maria de Maeztu' MDM-2014-0369**
  Funding Agency: MINECO
  Center: Institute of Cosmos Sciences (ICCUB) Duration: 2015—2018 .

- **CSD2008-0037**
  Funding Agency: MICCIN
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  PI Coordinator: **M.C Gonzalez-Garcia**
  Duration: 2008-2013 (Extended to 2015)

- **2014SGR104**
  Funding Agency: CUR Generalitat de Catalunya
  Center: Facultat de Fisica, Universitat de Barcelona
  PI: J. Russo
  Duration: 2014-2017

- **FPA2013-46570**
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  PI: D. Espriu
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- **NSF PHY13-16617**
  Funding Agency: National Science Foundaton, USA
  Center: C.N. Yang Institute for Theoretical Physics, Stony Brook U. , USA.
  PI: G. Sterman
  Duration: 2013-2016

- **NSF PHY09-53342**
  Funding Agency: National Science Foundaton, USA

Center: C.N. Yang Institute for Theoretical Physics, Stony Brook U. , USA.
PI: G. Sterman
Duration: 2019-2013

- **FPA2010-20807**
  Center: Facultat de Fisica, Universitat de Barcelona
  PI: D. Espriu
  Duration: 2011-2014

- **ACI2009-1038**
  Funding Agency: MICCIN
  Center: Facultat de Fisica, Universitat de Barcelona
  PI: **M.C Gonzalez-Garcia**
  Duration: 2010

- **2009SGR502**
  Funding Agency: CUR Generalitat de Catalunya
  Center: Facultat de Fisica, Universitat de Barcelona
  PI: J. Solá
  Duration: 2009-2011

- **FPA2006-28443-E**
  Funding Agency: MICCIN/MEC
  Center: Facultat de Fisica, Universitat de Barcelona
  PI: **M.C Gonzalez-Garcia**
  Duration: 2007-2008

- **FPA2007-66665-C02-01**
  Funding Agency: MICCIN/MEC
  Center: Facultat de Fisica, Universitat de Barcelona
  PI: D. Espriu
  Duration: 2008-2010

- **NSF PHY06-53342**
  Funding Agency: National Science Foundaton, USA
  Center: C.N. Yang Institute for Theoretical Physics, Stony Brook U. , USA.
  PI: G. Sterman
  Duration: 2007-2010

- **NSF PHY03-54776**
  Funding Agency: National Science Foundaton, USA
  Center: C.N. Yang Institute for Theoretical Physics, Stony Brook U. , USA.
  PI: G. Sterman
  Duration: 2004-2007

- **GRUPOS03/013**
  Funding Agency: Generalitat Valenciana

Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
PI: A. Pich
Duration: 2003-2005

- **NSF PHY0098527**
  Funding Agency: National Science Foundaton, USA
  Center: C.N. Yang Institute for Theoretical Physics, Stony Brook U. , USA.
  PI: G. Sterman
  Duration: 2000-2003

- **CTIDIB/2002/24**
  Funding Agency: Generalitat Valenciana
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: N. Rius
  Duration: 2002-2003

- **DGICYT FPA2001-3031**
  Funding Agency: MEC
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: A. Pich
  Duration: 2002-2004

- **GV99-3-1-01**
  Funding Agency: Generalitat Valenciana
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: **M.C. Gonzalez-Garcia**
  Duration: 1999-2001

- **EUROPEAN SCIENCE FOUNDATION Network grant N 86**
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: J. Valle
  Duration: 2000-2002.

- **DGICYT PB98-0693**
  Funding Agency: MEC
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: J. Valle
  Duration: 1999-2002.

- **PB97-1261**
  Funding Agency: MEC
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: A. Pich
  Duration: 1998-2001

- **CICYT AEN96-1718**
  Funding Agency: MEC

Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
PI: J. Bernabeu
Duration: 1996-1999

- **DGICYT PB95-1077**
  Funding Agency: MEC
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: J. Valle
  Duration: 1996-1999

- **CICYT AEN93-0234**
  Center: Universidad de Valencia
  PI: J. Bernabeu
  Duration: 1993-95

- **CICYT AEN90-0040** Funding Agency: MEC
  Center: Universidad de Valencia
  PI: A. Pich Zardoya
  Duration: 1990-92

- **Proyecto Conjunto de Colaboracion CSIC-CNPq de Brazil**
  Funding Agency: CSIC
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: J. Valle
  Duration: 1997-2000

- **Red Europea Physics Beyond the Standar Model ERBFMRXCT960090**
  Funding Agency: EU
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: J. Valle (en el Nodo de Valencia)
  Duration: 1996-2000

- **Red Europea Flavour Dynamics ERBCHRXCT930132**
  Funding Agency: EU
  Center: Instituto de Fisica Corpuscular (CSIC-U. Valencia)
  PI: J. Bernabeu (en el Nodo de Valencia)
  Duration: 1993-1996

- **Department of Energy Contract No DE-AC02-76ER00881**. Task G
  Funding Agency: Department of Energy. U.S.A.
  PI: V. Barger and F. Halzen
  Título del Trabajo: Research in High Energy Physics
  Center: Physics Department. University of Wisconsin. U.S.A.
  Duration: 1991-1993

- **USA-BRAZIL Cooperative Research INT 916182**
  Funding Agency: National Science Foundation. U.S.A.

PI: V. Barger and F. Halzen
Título del Trabajo: Particle Physics Phenomenology and Particle Astrophysics
Center: Physics Department. University of Wisconsin. U.S.A.
Duration: 1992-1994

- Colaboración **CYCYT-INFN** entre la Universidad de Valencia y la Universidad de Pádova
  Funding Agency: MEC
  PI: J. Bernabéu Alberola
  Duration: 1990-1991

- Proyecto de colaboración científica entre la Universidad de VALENCIA y la Universidad de LISBOA, dentro del Programa de Acciones Integradas Hispano-Portuguesas de la Secretaria de Estado de Universidades e Investigación del Ministerio de Educacion y Ciencia.
  PI: J.W.F. Valle
  Duration: 1990-1991

- Proyecto de colaboración científica entre la Universidad de VALENCIA y la Universidad de OXFORD, dentro del Programa de Acciones Integradas Hispano-Británicas de la Secretaria de Estado de Universidades e Investigación del Ministerio de Educacion y Ciencia.
  PI: J.W.F. Valle

Teaching Experience

- 2024 Particle Physics , Stony Brook U. (4 months Graduate course)
- 2023 Particle Physics , Stony Brook U. (4 months Graduate course)
- 2022 Nuclear and Particle Physics Stony Brook U. (4 months undergraduate course)
- 2021 Nuclear and Particle Physics Stony Brook U. (4 months undergraduate course)
- 2020 Nuclear and Particle Physics Stony Brook U. (4 months undergraduate course)
- 2019 Nuclear and Particle Physics Stony Brook U. (4 months undergraduate course)
- 2018 Nuclear and Particle Physics Stony Brook U. (4 months undergraduate course)
- 2017 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 90 ECTs)
- 2017 Particle Physics , Stony Brook U. (4 months Graduate course)
- 2016 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 90 ECTs)
- 2016 Particle Physics , Stony Brook U. (4 months Graduate course)
- 2015 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 90 ECTs)
- 2014 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 90 ECTs)
- 2014 Electrodynamics II , Stony Brook U. (4 months undergraduate course)
- 2013 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 90 ECTs)
- 2013 Electrodynamics II , Stony Brook U. (4 months undergraduate course)
- 2012 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 90 ECTs)
- 2012 Theoretical Particle Physics , Stony Brook U. (4 months Graduate course)
- 2011 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 60 ECTs)
- 2011 Theoretical Particle Physics , Stony Brook U. (4 months Graduate course)
- 2010 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 60 ECTs)
- 2010 Theoretical Particle Physics , Stony Brook U. (4 months Graduate course)
- 2009 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 60 ECTs)
- 2009 Theoretical Particle Physics , Stony Brook U. (4 months Graduate course)
- 2008 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master de 60 ECTs)
- 2008 Theoretical Particle Physics , Stony Brook U. (4 months graduate course)
- 2007 Física de Partículas , Facultat de Fisica, U. de Barcelona (Master 60 ECTs)
- 2008 Theoretical Particle Physics , Stony Brook U. (4 months graduate course)
- 2006 Graduate Seminar , Stony Brook U. ((4 months graduate course)
- 2006 Nuclear and Particle Physics Stony Brook U. (4 months undergraduate course)
- 2005 Graduate Seminar , Stony Brook U. (4 months graduate course)
- 2005 Nuclear and Particle Physics Stony Brook U. (4 months undergraduate course)
- 2003 Graduate Seminar , Stony Brook U. (4 months graduate course)

– 2003 Particle Physics, Stony Brook U. (4 months graduate course)
– 2003 Classical Physics, Stony Brook U. (4 months undergrad course, shared)
– 1993 Classical Physics University of Wisconsin (4 months undergraduate course)

Short courses and Summer Schools

– " Introduction to Phenomenology with Massive Neutrinos", 58th International School of Subnuclear Physics, Erice, Italy June 16-29, 2024 (2 hours)
– "Phenomenology of Massive Neutrinos", 14th International Neutrino Summer School 2023, Fermilab, USA Aug 2034, 3 hours.
– " Introduction to Phenomenology with Massive Neutrinos", 58th International School of Subnuclear Physics, Erice, Italy June 15-23, 2023 (2 hours)
– " Introduction to Phenomenology with Massive Neutrinos", 58th International School of Subnuclear Physics, Erice, Italy June 15-23, 2022 (2 hours)
– " Neutrino Physics", 10th International Doctorate Network School in Particle Physics, Astrophysics and Cosmology (IDPASC)", Sept 15-16, 2021 (3h On-line)
– " Neutrino Physics", CERN 2019 European School of High-Energy Physics, St Petersburg, Russia, Sept 2019, 4.5 hours.
– "Introduction to Massive Neutrinos", 12th International Neutrino Summer School 2019, Fermilab, USA Aug 2019, 4.5 hours.
– "Phenomenology of Massive Neutrinos", 2019 Invisibles School, Canfranc Underground Laboratory, Spain, June 2019, 2 hours.
– "Massive Neutrinos circa 2017", 39th International School of Nuclear Physics, Erice, Italy (1.5h)
– "Neutrino Physics", Taller de Altas Energías, Benasque, Spain, Sept 2017, 3 hours.
– " Neutrinos: Global Fit to Data", SLAC Summer Institute, Stanford Linear Accelrator, USA, August, 2015, 1.5 hours
– "Neutrino Physics", First Peruvian School for High Energy Physics and Cosmology, Lima, Peru, June 2015, 3hours.
– " Neutrino Physics", CERN Accademic Training CERN, Geneva, Switzerland, Dec 2013. 3 hours.
– " Neutrino Physics", CERN-Latin-American School of High Energy Physics, Arequipa, Peru, March 2013. 4 hours.
– " Neutrinos and the Universe", Nufact11 Summer school, Geneva, Switzerland, July 2011. 3 hours.

- "Neutrinos: Measurement of Oscillation Parameters", IV International Pontecorvo Neutrino School, Alusha, Ukraine. 3 hours.
- " Neutrino Physics", TASI Summer Institute, Boulder, Colorado, USA, July 2008. 4 hours
- " Neutrino Physics", Taller de Altas Energias, Jaca, May 2007. 4 hours.
- "Neutrino Physics", NUFACT Summer Institute, KEK, Japon, July 2007. 4 hours.
- " Neutrino Physics", Taller de Altas Energias, Santiago de Compostela, September 2004. 3 hours.
- " Neutrino Physics", , European School of High-Energy Physics, San Feliu, June 2004. 6 hours.
- " Neutrino Physics", , NATO ASI Physics Summer School, St. Croix, U.S. Virgin Islands, 12-17 June 2002. 6 hours.
- " Neutrino Physics", Yang Institute for Theoretical Physics, Stony Brook, USA, 3-14 Sept 2001. 6 hours.
- " Neutrino Physics" 11th Jorge Andre Swieca Summer School: Particle and Fields, Sao Paulo, Brazil, 14-26 January 2001. 6 hours.

Thesis and Master thesis

- "Scrutinizing Leptonic Sector Symmetries with Data from Oscillation and Collider Experiments"
  Joao Paulo da Matta Araujo Pinhieiro
  Universitat de Barcelona
  PhD Thesis: Sept 2021-ongoing (expected summer 2025)
- "Leptonic CP violation and its origin"
  Ivan Esteban Muñoz
  PhD Thesis Defended 10-09-2020
  Universitat de Barcelona
  Grade: Sobresaliente Cum Laude
- "New Physics in the Electroweak Sector Under Scrutiny at LHC"
  Nuno Rosa Agostinho
  PhD Thesis Defended 17-10-2019
  Universitat de Barcelona
  Grade: Sobresaliente Cum Laude
- "Extraterrestrial Neutrinos as Probes of Their Sources and Interactions"
  Ningqiang Song
  PhD Thesis Defended on 10-5-2018
  Stony Brook U.
  Grade: Aproved

– "Effective Lagrangians for Higgs Physics"
Tyler S. Corbett
PhD Thesis Defended 25-4-2015
Stony Brook U.
Grade: Aproved

– "On The Origin of Masses at the LHC"
Juan Gonzalez Fraile
PhD Thesis Defended 5-9-2014
Universitat de Barcelona
Grade: Sobresaliente Cum Laude

– "Neutrinos in Astrophysics and Cosmology"
Jordi Salvadó Serra.
PhD Thesis Defended 27-9-2012
Universitat de Barcelona
Grade: Sobresaliente Cum Laude

– "Soft Leptogenesis"
Chee Sheng Fong
PhD Thesis Defended on 22-5-2011
Stony Brook U.
Grade: Aproved

– "Solar Neutrinos"
PhD Thesis Defended on 6-9-2002
Carlos Peña Garay.
Universidad de Valencia
Grade: Sobresaliente Cum Laude

– " Exploring New Physics with Neutrino Oscillation Esperiments" Gaving King
Master Thesis Defended 8-2-2023
Grade: Sobresaliente

– "$H \to \mu\tau$ in the Inverse Type I See-Saw Model"
Iñigo Robredo
Master Thesis Defended 8-9-2017
Universitat de Barcelona
Grade: Notable

– "Neutrino oscillations and CP violation: analysis of NOvA"
Ivan Esteban Muñoz
Master Thesis Defended 30-6-2016
Universitat de Barcelona
Grade: Sobresaliente

– "Non Unitary Neutrino Oscillations"
Alba Cervera Lierta **Master Thesis** Defended 3-7-2015

Universitat de Barcelona
Grade: Sobresaliente

- "Astroparticle Physics with Neutrino Telescopes"
  Andrea Rodriguez Perez
  Master Thesis Defended 12-9-2013
  Universitat de Barcelona
  Grade: Notable

- "Primordial Nucleosynthesis versus LHC constraints on Z"'
  Ana Solaguren Beascoa
  Master Thesis Defended 08-1-2013
  Universitat de Barcelona
  Grade: Sobresaliente

- "Anomalous Gauge Couplings at LHC"
  Juan Gonzalez-Fraile
  Master Thesis Defended 13-9-2010
  Universitat de Barcelona
  Grade: Sobresaliente

- "Solar Neutrino Oscillations"
  Master thesis Presented on 22-07-2001
  Carlos Peña Garay Universidad de Valencia
  Grade: Sobresaliente Cum Laude

Talks and Lectures at International Events

2024– "The 8th Shanghai Symposium on Particle Physics and Cosmology",
– Shanghai, China, Nov 11-14 (Plenary Talk)
"Yeti 2024 Summer School: The 3 ν problem", Durham, UK, July 29, Aug 1 (Lecturer)
– "59th International School of Subnuclear Physics", Erice, Italy, June 15-23, 2024 (Lecturer)
– "SUSY24: The 31st International Conference on Supersymmetry"
Madrid, Spain, June 10-14,2024 (Plenary Talk)
– "International Meeting on Fundamental Physics"
Benasque, Spain, September 9-14 (Plenary Talk)
2023 – "58th International School of Subnuclear Physics", Erice, Italy June 15-23, 2023 (Lecturer)
"14th International Neutrino Summer School 2023", August, Fermilab, USA (Lecturer)
2022 – "4th Summit on Exploring the Dark Side of the Universe", Ille Reunion, Nov 7-13 (Plenary Tal
"Feebly Interacting Particles Workshop", CERN, Switzerland, Oct 17-21 (Plenary Talk)"
"58th International School of Subnuclear Physics", Erice, Italy June 15-23, 2022 (Lecturer)
"Invisibles22 Workshop", June 20-24 2020, Orsay, France June 20th (Opening talk)
2021 – "32 Rencontre de Blois", October 21, Blois, France 2021 (Plenary talk)
" Conference on Flavour Physics and CP Violation (FPCP 21)"
June 7th (Plenary on-line talk)
"10th International Doctorate Network School in Particle Physics,
Astrophysics and Cosmology (IDPASC)", Sept 15-16, (On-line Lectures)
2020 – "SnowMass 2021 NF01 Workshop" Sept 3rd (Invited on-line talk)
– " SnowMass 2021 TF11: Neutrino Theory Workshop". Sept 21st (Invited on-line talk)
2019 – "Brookhaven Forum" 2019, Brookhaven National Laboratory, USA (Plenary Talk)
– CERN 2019 European School of High-Energy Physics, St Petersburg, Russia, (Lecturer)
– 12th International Neutrino Summer School 2019, Fermilab, USA (Lecturer)
– Invisibles 2019 School, Canfranc Underground Laboratory, Spain (Lecturer)
2018 – Workshop on "History of Neutrinos", APC Paris, France (Plenary Talk)
– Neutrino "Town Meeting", CERN, Switzerland (Plenary Talk)
2017 – Pascos 2017, Madrid, SPAIN (Plenary Talk)
– Workshop on "Neutrinos: the quest for a new physics scale"
CERN, (Plenary Talk)
– Workshop on "Recent Developments in Neutrino Physics and Astrophysics"
Gran Sasso, Italy (Plenary Talk)
– Taller de Altas Energías, Benasque, Spain (Lecturer)
– 39th International School of Nuclear Physics, Erice, Italy (Lecturer)
2016 – Invisibles 2016 Workshop, Padova, Italy (Plenary Talk)
– Meeting of Neutrino Research Group of CNRS, Grenoble, (Invited International Speaker)
2015 – 27th Reencontres de Blois, Blois, France (Plenary Talk)
– Invisibles 2015 School, Madrid, Spain (Lecturer)
– First Peruvian High Energy Physics School, Lima, Peru (Lecturer)
– 43rd SLAC Summer Institute, Standford Linear Accelerator, USA (Lecturer)
– INT workshop in QCD for New Physics at the Precision Frontier, Seattle (Plenary Talk)
2014 – Astroparticle Physics Joint TeVPA/IDM Conference, Amsterdam, (Plenary Talk)
– Invisibles 2014 Workshop, Paris, France (Plenary Talk)

2013 – CERN-Latin-American School of High Energy Physics
Arequipa, Peru (Lecturer)
– Workshop on facing the Scalar Challenge, ULB, Brussels,Belgium (Plenary Talk)
– 13th International Workshop on Topics in Astroparticle and Underground Physics (TAUP13), Asilomar, California, USA (Plenary Talk)
– Higgs Couplings 2013 Workshop (HC2013), Freiburg, Germany (Plenary Talk)
– XXIV International Workshops on Weak Interactions and Neutrinos
Natal, Brazil (Plenary Talk)
– Accademic Training Lectures, CERN, Switzerland (Lecturer)

2012 – 36th International Conference on High-Energy Physics (ICHEP12)
Melbourne, Australia (Plenary Talk)
– UK Annual Theory Meeting, Durham, UK (Plenary Talk)

2011 – Nufact11 , Summer School, Geneva, Switzerland (Lecturer)
– Workshop on Sterile Neutrinos at the Crossroads ,
Blacksburg, VA, USA (Summary Talk)

2010 – IV International Pontecorvo Neutrino School, Alusha, Ukraine (Lecturer)
– Neutrino Oscillation Workshop (NOW2010), Ottranto, Italy (Plenary Talk)

2008 – "Neutrinos"
– 14th International Symposium on Particles, Strings, and Cosmology (PASCOS08)
Perimeter Institute, Waterloo, Canada (Plenary Talk)
– "Lectures on Neutrino Physics"
TASI 08, Summer School, Boulder, Colorado (Lecturer)
– "Physics of Massive Neutrinos"
10th International Workshop on Neutrino Factories, SuperBeams and Beta Beams
Valencia, Spain (Plenary Talk)
– "Neutrinos"
18th International Conference on Particles and Nuclei (PANIC08)
Eilat, Israel (Plenary Talk)

2007 – "Lectures on Neutrino Physics"
Nufact 07, Summer School, KEK, Japan (Lecturer)
– "Lectures on Neutrino Physics"
Taller de Altas Energías, Jaca, Spain (Lecturer)
– "Probing Flavour with Neutrinos"
Workshop on Flavour in the LHC Era, CERN (Review Talk)

2006 – "Neutrinos"
UB Christmas Workshop, Barcelona, Spain
– "Neutrinos"
Latinamerican Symposium of High Energy Physics
Puerto Vallarta, Mexico (Review Talk)
"Non-standard neutrino oscillation scenarios"
Workshop on Exotic Physics with Neutrino Telescopes
Uppsala ,Sweeden
– "Neutrino Mass, Mixing and Beyond"
Phenomenology Symposium
University of Wisconsin, Madison (Plenary Talk)
– "Neutrino Mass, Mixing and Beyond"
14th International Conference on SUSY and Unification of Fundamental Interactions
Irvine (Plenary Talk)

2004 – "Subdominant Effects in Atmospheric Neutrinos"
Workshop on Subleading Effects in Atmospheric Neutrinos
ICRR, Kashiwa, Japon (Opening Talk)
– "Lectures on Neutrino Physics"
Taller de Altas Energías, Santiago de Compostela,(Lecturer)
– "Global Analyses of Neutrino Data"
Nobel Symposium on Neutrino Physics, Haga Slott, Suecia (Review Talk)
– "Lectures on Neutrino Physics"
European School of High-Energy Physics, San Feliu,(Lecturer)
– "Lectures on Neutrino Physics"
XXXII International Meeting On Fundamental Physics, Alicante (Lecturer)
– " New Developments in Neutrino Oscillations"
5th Workshop on Neutrino Oscillations and their Origin' (NOON2004)
Odaiba, Tokyo, Japan

2003 – "Neutrinos"
UK Annual Theory Meeting, Durham, UK, (Review Talk)
– "Status of Neutrinos Masses and Mixing"
IX Christmas workshop, IFT Madrid (Review Talk)
– " Neutrino Masses and Mixing "
Meeting of the American Physical Society, Philadelphia, (Review Talk)
– " Neutrino Oscillations and the Sunshine"
4th Workshop on Neutrino Oscillations and their Origin (NOON2003)
Kanazawa, Japan.

2002 – "Theory of Neutrino Masses and Mixing"
31th International Conference on High-Energy Physics (ICHEP02)
Amsterdam (Plenary Session Talk)
– "Neutrino Masses and Mixing"
10th International Conference on SUSY and Unification of Fundamental Interactions
DESY Hamburg (Review Talk)
– "Neutrino Physics"
NATO ASI Physics Summer School, St. Croix, U.S. Virgin Islands (Lecturer)
– "Neutrino Masses and Mixing"
Meeting of the American Physical Society" Albuquerque (Review Talk)

2001 – "Two flavor solar neutrino global analysis"
"Three and four neutrino analysis of solar and atmospheric data"
3rd Workshop on Neutrino Oscillations and their Origin (NOON2001)
ICRR, Kashiwa, Japan.

– "Four-Neutrino Oscillations"
Interational Europhysics Conference on High Energy Physics, Budapest

– "Neutrino Masses and Mixing"
Snowmass Conference on the Future of Particle Physics, Colorado (Review Talk)

– "Four-Neutrino Oscillations"
Les Houches EuroConference on Neutrino Masses and Mixing", Les Houches, France

– "Active versus Sterile Neutrino Oscillations"
International Workshop on Neutrino Oscillations, Gran Sasso, Italy

– " Solar and Atmospheric Neutrino Oscillations"
Scandianvian Neutrino Oscillation Workshopo (SNOW), Upsala, Sweden (Review Talk)

– "Neutrino Physics"
11th Jorge Andre Swieca Summer School: Particle and Fields
Campos de Jordao, Brazil (Lecturer)

2000 – " Phenomenology of Neutrino Oscillations"
VI Christmas workshop, IFT Madrid

– "Neutrino Oscillations"
Triangle Meeting on Particle Physics, Viena, Austria

– "Solar and Atmospheric Neutrino Oscillations"
EuroConference Series on Frontiers in Particle Astrophysics and Cosmology
San Feliu, Spain

– "Solar and Atmospheric Neutrino Oscillations"
30th International Conference on High-Energy Physics (ICHEP00)
Osaka, Japan (Review Talk in ν session)

– "Global and Unified Analysis of Solar Neutrino Data"
6th Marcel Grossman Meeting, Rome

– "Global and Unified Analysis of Solar Neutrino Data"
19th International Conference on Neutrino Physics and Astrophysics - ν2000
Sudbury, Canada

– "Phenomenology of Neutrino Oscillations"
Pheno2000 Symposium on Phenomenology for the Nu Century
Madison, USA (Review Talk)

1999 – "Status of the MSW Solutions to the Solar Neutrino Problem "
6th International Workshop on Topics in Astroparticle and Underground Physics (TAUP99), Paris

– "Oscillation Parameters in One Decade from Now"
ICFA/ECFA Workshop: Neutrino Factories based on Muon Storage Rings
Lyon , France

– " Alternative Solutions to the Atmospheric Neutrino Problem "
Cosenor's Meeting, Oxford.

– "Solutions to the Atmospheric Neutrino Problem"
"Seasonal Dependence in the Solar Neutrino Flux"
International Workshop on Particles in Astrophysics and Cosmology, Valencia, Spain

– "Solutions to the Atmospheric Neutrino Problem"
10th International Baksan School "Particles and Cosmology", Russia (Lecturer)

1998 – " Solutions to the Atmospheric Neutrino Problem"
IV Christmas workshop, IFT Madrid

– "Neutrino Masses and Mixing"
5th International Workshop on Tau Lepton Physics (TAU 98)
Santander, Spain (Review Talk)

– "Solutions to the Atmospheric Neutrino Problem"
"Anomalous Higgs Couplings at Colliders"
29th International Conference on High-Energy Physics (ICHEP 98), Vancouver, Canada

– "Update on Atmospheric Neutrinos",
Euroconference: New Trends in Neutrino Physics, Ringberg Castle, Germany

1997 – "Limits on Anomalous Couplings from Higgs Boson Production at the Tevatron"
International Workshop on Physics Beyond the Standard Model:
From Theory to Experiment, Valencia, Spain

– "Update on Atmospheric Neutrinos"
XVIII Encontro Nacional de Física de Partículas e Campos
Sociedade Brazileira de Física, Caxambu, Brazil (Invited Lecture)

1995 – " Present and Future of ν Oscillation
International Workshop on Elementary Particle Physics:
Present and Future, Valencia, Spain

1993 – "Searching for Exotic Tau Decays"
3rd Workshop on the tau-charm Factory, Marbella, Spain

– "R-parity Breaking at Hadron Colliders"
III SSC Symposium, Madison

1992 – "Threshold Effects on Top Production in $\gamma - \gamma$ Interactions"
XXVI International Conference of High Energy Physics (ICHEP92) , Dallas

Service

- Member of the Scientific Advisory Committee of Astroparticle Physics European Consortium (APPEC), Since 2024.
- Member of the Scientific Advisory Committee of the SuperChooz experiment, Since 2024.
- *Chair of the Sakurai Prize committee of the American Physical Society*, 2023
- *Member of the Sakurai Prize committee of the American Physical Society*, 2022
- *Member of the Evaluation Committee for PhD Programs in Catalonian Universities*, (Agéncia per a la Qualitat de Sistema Universitari de Catalunya), 2021-2022
- *Member of the European Commmittee for Future Accelerators (ECFA)*, 2019–
- *Member of the Advisory Committee to the Fermilab Distinguished Scholars Program*, 2017– 2022
- *Member of the Department of Energy (DOE) review panel of Theoretical High Energy Physics (HEP) programs at DOE national laboratories*, USA, 2018
- *Member of the Scientific Committee of the Galieo Galileo Institute*, Italy, 2015–2021.
- *Member of the of PE2 panel of the ERC Consolidator Grants.* Calls of 2014 and 2016
- *Member of Scientific Advisory Commitee of the Underground Laboratory of Canfranc.* 2012–2016
- *Member of the Advisory Commitee of the Programa de Fisica de Particulas*, MEC, 2006.
- *Member of Scientific Policy Committee of the Underground Laboratory of Canfranc.* 2005–2007
- *Member of Comisión de Evaluación en el área de Física de los contratos Ramón y Cajal y Juan de la Cierva*, 2004
- *Member of Agencia Nacional de Evaluación y Prospectiva*, since 2004.
- *Member of Comisioń de área de Ciencia y Tecnologías Físicas of CSIC*, 2001–2004.