PERSONAL INFORMATION

Family name, First name: **PATTAVINA, LUCA MARIA**
Researcher unique identifiers: SCOPUS Author ID: 34977247900
ORCID: 0000-0003-4192-849X

• CURRENT POSITION

2024 – Associate Professor - Physics Department, Università degli Studi di Milano-Bicocca (Italy)

• PREVIOUS POSITIONS

2019 – 2023 Scientist - Research Division of Laboratori Nazionali del Gran Sasso of INFN (Italy)
2018 – 2023 Visiting Scientist - Fakultät für Physik/E15, Technische Universität München (Germany)
2017 – 2019 Fixed term researcher - Astroparticle Physics Area, Gran Sasso Science Institute (Italy)
2013 – 2017 Scientist - Research Division of Laboratori Nazionali del Gran Sasso of INFN (Italy)

• EDUCATION

2024 National Scientific Habilitation "Abilitazione Scientifica Nazionale" for the position of Full Professor (I fascia) in Experimental Physics of fundamental interactions.
2018 National Scientific Habilitation "Abilitazione Scientifica Nazionale" for the position of Associate Professor (II fascia) in Experimental Physics of fundamental interactions.
2011 Double - Ph.D. - Département de Physique, Université Claude Bernard Lyon 1 (France) and Dipartimento di Fisica G. Occhialini, Università degli Studi di Milano-Bicocca (Italy). Prof. C. Augier and Prof. E. Previtali.
2007 Master Degree - 110/110 *Summa cum Laude* - Dipartimento di Fisica G. Occhialini, Università degli Studi di Milano-Bicocca (Italy). Prof. A. Pullia.

• FELLOWSHIPS AND APPOINTMENTS

2024 Nominated Director Candidate of the Max Planck Institute for Physics - MPP (Germany)
2023 – Research fellowship at Istituto Nazionale di Fisica Nucleare - INFN (Italy)
2023 – Honorary Fellowship at the TUM - Institute for Advance Study (Germany)
2019 Fellowship for International Scientific Cooperation between Italy and South Korea, Italian Ministry of Foreign Affairs.
2011 – 2013 Post-Doctoral fellowship at INFN (Italy)
2009 Studentship for European Marie Curie Advanced Cryogenics Course (ID: 45781)
2004 – 2005 Erasmus Scholarship at Physic Department of École Polytechnique (Paris, France)

• REVIEWING ACTIVITIES

2024 – External expert for ERC-Starting Grants and Swiss National Science Foundation Grants.
2023 – Member of the Board of Editors for European Physics Journal Plus (IF: 3.9), Springer.
2023 – Associate Editor of Frontiers in Physics (IF: 3.7), Frontiers.
2016 – Reviewer, Journal of Astroparticle Physics (IF: 3.2), Environment International (IF: 7.6), Journal of Luminescence (IF: 3.3), Low Temperature Physics (IF: 1.1).

• GRANTS AND FUNDINGS

2024 **Seal of Excellence** for the ERC-PoC-2024 on "*ARS-NOVA - Atomization Revolution for Sustainability a New technological advancement*"
2024 Principal Investigator: **PRIN-2022** (Italy) "*Advanced techniques for a next generation Isotopically enriched cryogenic DM experiment*". Grant: 0.2M euro.
2023 Principal Investigator: **PRIN-2022-PNRR** (Italy) "Spectroscopy for Agriculture, Fundamental physics and Environmental protection". Grant: 0.2M euro. (declined)
2023 Principal Investigator: **ERC-Consolidator-2022 Grant** - "*RES-NOVA*". Grant: 2.7M euro.

2022 Principal Investigator: **Seed Money Grant** - Origins Excellent Cluster (Germany) "*Production of $PbWO_4$ and development of trigger algorithms for (pre-)SN neutrino detection*". Grant: 30k euro.
2019 Principal Investigator: **Seed Money Grant** - Origins Excellent Cluster (Germany) "*Development of archaeological Pb cryogenic detectors for Supernova neutrino detection*". Grant: 30k euro.
2018 Principal Investigator at INFN: **PRIN-2017** (Italy) "*Advanced techniques for a next-generation cryogenic Double Beta Decay experiment*",. Grant: 0.85M euro.
2016 – 2019 Manager of the CUPID project at Laboratori Nazionali del Gran Sasso (Italy): ~150k euro/y.

• Co-SUPERVISION/TUTORING OF STUDENTS

2024 - 3 Bachelor student , Physics Department, Università degli Studi di Milano-Bicocca (Italy)
2021 1 Bachelor student , Fakultät für Physik/E15, Technische Universität München (Germany)
2018 – 2023 2 Ph.D. students, Fakultät für Physik/E15, Technische Universität München (Germany)
2015 1 Ph.D. student, Astroparticle Physics Area, Gran Sasso Science Institute (GSSI) (Italy)
2008 – 2011 4 Master students, Dipartimento di Fisica, Università degli Studi di Milano-Bicocca (Italy)

• TEACHING ACTIVITIES

2024 – Lecturer of Laboratory of Experimental Physics: Optics and Electromagnetism
2018 – 2022 Teaching Assistant at "Astroparticle Physics", Fakultät für Physik/E15, Technische Universität München (Germany)
2009 Teaching Assistant at "Laboratory of experimental Physics: Optics and Electromagnetism", Dipartimento di Fisica G. Occhialini, Università degli Studi di Milano-Bicocca (Italy)

• INSTITUTIONAL RESPONSIBILITIES

2019 Member of the PhD Degree Board at the Astroparticle Physics Area, Gran Sasso Science Institute (Italy)
2018 – 2019 Coordinator of the MoU for academic cooperation between Fakultät für Physik/E15, Technische Universität München (Germany) and Astroparticle Physics Area, Gran Sasso Science Institute.
2008 – 2011 Member of the Bachelor/Master Degree Board at the Physics Department, Università degli Studi di Milano-Bicocca (Italy)

• MAJOR COLLABORATIONS

2021 – RES-NOVA: A revolutionary archaeological Pb observatory for astrophysical sources
2019 – 2023 NuCLEUS: Coherent elastic neutrino-nucleus scattering experiment
2018 – CRESST: Cryogenic rare events searches with superconducting thermometers. Topic: DM.
2017 – CUPID (CUORE Upgrade with Particle IDentification), Topic: Neutrino mass.
2010 – 2016 LUCIFER (low underground cryogenic installation for elusive rates) Topic: Neutrino mass.
2009 – 2011 EDELWEISS: Expérience pour detecter les Wimps en site souterrain. Topic: DM searches
2007 – CUORE: Cryogenic Underground Observatory for Rare Events. Topic: Neutrino physics

• RESPONSIBILITIES IN COLLABORATIONS

2023 – Spokesperson of the RES-NOVA collaboration (>40 members)
2021 – 2023 Coordinator of the CRESST group at Technische Universität München (Germany)
2019 – 2023 Coordinator of the Cryogenics working group (10 members) for the NuCLEUS experiment
Coordinator of the Light Detector working group (20 members) for the CUPID experiment
2018 – Shifter Coordinator of the CRESST experiment (50 members)
2016 – 2020 Run Coordinator and detector manager of the CUPID experiment (50 members)
2016 – 2019 Principal Investigator and Manager of the CUPID project at Laboratori Nazionali del Gran Sasso of INFN (Italy). Funds: ~150k€/y
2014 – 2023 Member of the Technical Board of the CUPID project
2014 – 2016 Chair of the CUORE Collaboration data vetting board (110 members)
2011 – 2014 Member of the Technical Board of the CUORE project

• INTELLECTUAL PROPERTY AND PATENTS

2023 Patent EP4491982A1 at European Patent Office (EPO) on "Apparatus for cooling a sample environment and method of protecting a sample from vibrations of a vessel of a continuously cooled dry cryostat"
Filed 1 patent at Italian Patent Office (IUMB) " Cryogenic detector for measuring radioactivity in a sample"

• RESEARCH OUTPUT

- H-Index according to SCOPUS: 43. Total number of Publications: 236. Total number of citations: 5650.
- 20% of publications on the top 10% most cited paper world-wide (source SCOPUS).
- Primary/Corresponding author of >20 publications on international peer-reviewed journals.
- Invited talks at international conferences and research institutes: >25.
- Conference convener at 3 international conferences/workshops.

• PUBLIC OUTREACH

2023 Documentary on European research projects - Chili TV "Alè Europa" - Ep. 12 "RES-NOVA"
2016 Speaker at International Fame Lab - Talking Science, Italy
2014 – 2015 Member of the organizing committee of "Sharper - European Research night", (HORIZON2020 - Marie-Curie Actions GA 633367)

• LIST OF SELECTED PUBLICATIONS (the ones without PhD. advisor are marked with *)

**Results on sub-GeV dark matter from a 10 eV threshold CRESST-III silicon detector*
CRESST Collaboration (G. Angloher et al.)
Phys. Rev. D 107 (2023) 12, 122003 - DOI: 10.1103/PhysRevD.107.122003

Search for Majorana neutrinos exploiting millikelvin cryogenics with CUORE,
CUORE Collaboration (D.Q. Adams et al.)
Nature 604 (2022) 7904, 53-58 - DOI: 10.1038/s41586-022-04497-4

Final Result on the Neutrinoless Double Beta Decay of Se 82 with CUPID-0
CUPID-0 Collaboration (O. Azzolini et al.)
Phys. Rev. Lett. 129,111801 (2022) - DOI: 10.1103/PhysRevLett.129.111801

**RES-NOVA sensitivity to core-collapse and failed core-collapse supernova neutrinos,*
RES-NOVA Group of Interest (**L. Pattavina** et al.)
J. Cosmol. Astropart. Phys. 10 (2021) 064 - DOI: 10.1088/1475-7516/2021/10/064

**Neutrino observatory based on archaeological lead*,
L. Pattavina, N. Ferreiro Iachellini and I. Tamborra
Phys. Rev. D 102 (2020) 6, 063001 - DOI: 10.1103/PhysRevD.102.063001

**First results from the CRESST-III low-mass dark matter program*,
CRESST Collaboration (A.H. Abdelhameed et al.)
Phys. Rev. D 100 (2019) 10, 102002 - DOI: 10.1103/PhysRevD.100.102002

**Radiopurity of an archaeological Roman lead cryogenic detector*
L. Pattavina, J.W. Beeman, M. Clemenza, O. Cremonesi et al.,
Eur. Phys. J. A 55 (2019) 8, 127 - DOI: 10.1140/epja/i2019-12809-0

**Background suppression in massive TeO2 bolometers with Neganov-Luke amplified light detectors*,
L. Pattavina, N. Casali, L. Dumoulin, A. Giuliani et al.,
J. Low Temp. Phys. 184 (2016) 1-2, 286-291 - DOI: 10.1007/s10909-015-1404-9

**Discovery of the ^{151}Eu alpha-decay*,
N. Casali, S.S. Nagorny, F. Orio, **L. Pattavina** et al.,
J. Phys. G 41 (2014) 075101 - DOI: 10.1088/0954-3899/41/7/075101