

ELENA APRILE

PHYSICS DEPARTMENT, PUPIN HALL 1006
COLUMBIA UNIVERSITY, NEW YORK, NY 10027

Phone: (212) 8543258, Fax: (212) 8548121

e-mail: age@astro.columbia.edu

Web page: <https://physics.columbia.edu/content/elena-aprile>

Group page: <http://xenon.astro.columbia.edu>

XENON page: <http://xenon1t.org>

CURRICULUM VITAE

EDUCATION

- 1982 : Ph.D. in Experimental Particle Physics, University of Geneva, Switzerland
1978 : *Laurea* in Physics (Magna Cum Laude), University of Naples, Italy

ACADEMIC POSITIONS

- 2001 - : Professor of Physics, Columbia University
2003 - 2009 : Co-Director, Columbia Astrophysics Laboratory
1996 - 2000 : Associate Professor of Physics (with tenure), Columbia University
1991 - 1995 : Associate Professor of Physics (without tenure), Columbia University
1986 - 1990 : Assistant Professor of Physics, Columbia University
1983 - 1985 : Post-Doctoral Researcher, Physics Department, Harvard University

SELECTED HONORS and AWARDS

- 2020: Elected to the American Academy of Arts and Sciences
2020: University of California San Diego, Margaret Burbidge Visiting Professor
2019: Berkeley-Lancelot Prize, American Astronomical Society
2019: Princeton University Hamilton Honorary Lecture
2019: Simons Foundation Lecture
2019: Oxford University Cherwell Simon Honorary Lecture
2018: Yale University Vernon Hughes Honorary Lecture
2017: University of Stockholm, Doctor Honoris Causa
2017: Lecture at the Festival della Scienza di Cagliari
2016: Lecture at the Festival della Scienza di Genova
2015: Lecture at the Festival della Scienza di Roma
2015: BBVA Foundation of Madrid Honorary Lecture
2012 : Weizmann Institute of Science, Rosi and Max Varon Visiting Professor
2005 : Elected Ufficiale della Repubblica Italiana
2001 : Elected Fellow of the American Physical Society
2002: Elected Spokesperson of the XENON Dark Matter Collaboration
1996: Elected Spokesperson of the LXeGRIT Compton Telescope Collaboration
1991 : National Science Foundation Career Award

PROFESSIONAL MEMBERSHIPS and SERVICES

2020-	American Academy of Arts and Sciences
1985-	American Physical Society
1986-	American Astronomical Society
2017-	Fermilab Program Advisory Committee
2017-	Chair Elect of the APS Forum for International Physics
2015-	China JinPing Underground Laboratory Program Advisory Committee
2009-13	Canfranc Underground Laboratory Scientific Committee
2001-2004	Executive Committee of the APS Division of Astrophysics
2005	DoE annual review of High Energy Physics at Fermilab
2008-2010	ASPERA Program Review Committee
2009-2010	National Academy Astronomy and Astrophysics 2010 Program Prioritization Panel on Particle Astrophysics and Gravitation
2009-2013	CNRS IN2P3 Scientific Committee

EDITOR and REVIEWER SERVICE

Reviewer for *Physical Review*, *Physical Review Letters*, *Review of Modern Physics*, *Journal of Cosmology and Astroparticle Physics*, *Astrophysical Journal*, *Nuclear Instruments and Methods*, *Journal of Instrumentation*. Also regular reviewer for NSF, DOE, Wallenberg, SNF and ERC (European Research Council) research proposals as well as invited reviewer of international research centers.

Editor for the *Elsevier Astroparticle Physics Journal (past)*, the *Journal of Instrumentation (present)*

INVITED COLLOQUIA and CONFERENCE TALKS

More than 50 talks over the last ten years, mostly plenary talks at international conferences and invited or honorary lectures at prestigious universities. Many public outreach talks worldwide and regularly invited to speak to female students in physics departments.

ADVISING and MENTORSHIP EXPERIENCE

In addition to several undergraduate students per year, I have advised a total of 23 physics graduate students and 20 postdocs over the course of my career. Currently in my research group I have 4 graduate students, 2 postdocs, 2 research scientists and 1 staff associate.

Ph.D. Students: Jun Park (1988), Stephen Salchow (1989), Reshmi Mukherjee (1993), Danli Chen (1994), Ping Chen (Summer1995), Kaya Mori (Summer1997), Burair Kothari (Summer1998), Tomotake Kozu (Summer 1998), Fang Xu (1998), Joseph Formaggio (Summer 1999), Alessandro Curioni (2004), Kaixuan Ni (2006), Guillaume Plante (2011), Bin Choi (2012), Kyungeun Lim (2012), Luke Goetze (2015), Hugo Contreras (2015), Matthew Antony (2017), Zachary Greene (2018), Yun Zhang (current), Joseph Howlett (current), Tianyu Zhu (current), Zihao Xu (current).

Postdocs and Research Scientists:

Masayo Suzuki (permanent scientist @Riken, Japan), Alexey Bolotnikov (permanent scientist@BNL, USA), Shu Zang (permanent scientist@IHEP, China), Alessandro Curioni (permanent scientist@ETH, Switzerland), Uwe Oberlack (Professor@Mainz University, Germany), Masaki Yamashita (Professor@University of Tokyo, Japan), Pawel Majweski (permanent scientist@RAL, England), Kaixuan Ni (Professor@San Diego University, USA), Rafael Lang (Professor@Purdue University USA), Antonio Melgarejo (Facebook,USA), Ranny Budnick (Professor@Weizmann Institute of Science, Israel), Marcello Messina (permanent scientist@INFN,Italy), Alfio Rizzo (permanent scientist@ESS,Sweden), Marc Weber (industry, Germany), Patrick de Perio (permanent scientist@TRIUMF, Canada), Qing Lin (Professor@USTC, China), Guillaume Plante (Columbia

University), Fei Gao (Professor@Tsinghua University, China), Masatoshi Kobayashi (Columbia University), Knut Morå (Columbia University).

AWARDS and GRANTS AS PRINCIPAL INVESTIGATOR

More than 35M\$ from the National Science Foundation, Department of Energy, NASA and DARPA over the course of my career. Below are the awards for the XENON project.

National Science Foundation - Division of Physics

2017 -2021 (PHY-1719286) “Continuation of the Dark Matter Search with XENON1T at LNGS”
\$3,494,861

2012 -2017 (PHY-1209979) “The XENON1T Dark Matter Project: A Project Proposal from the US Institutions of the XENON Collaboration”
\$7,812,136

2013 -2017 (PHY-1413495) “Collaborative Research: Continuation of the XENON Dark Matter Search at LNGS”
\$2,425,200

2009 -2012 (PHY-1209979) “Continuation of the XENON Dark Matter Project: Construction and Underground Operation of an Upgraded XENON100 Detector”
\$2,423,847

2009-2013 (PHY-0923274) ”MRI Instrument Development for Liquid Xenon Dark Matter Searches: An Atom Trap Trace Analysis System to Measure Ultra-Low Krypton Contamination in Xenon”
\$1,100,000

2007 -2010 (PHY-0705337)“The XENON Dark Matter Project: Construction and Underground Operation of a 100 kg Detector”
\$3,780,323

2009 -2012 (PHY-0919363)“Collaborative Proposal: MAX Multi-ton Argon and Xenon TPCs”
\$519,344

2004 -2007 (PHY-0400596) “The XENON Dark Matter Project: Construction of the 1st 100 kg Module”
\$4,267,585

2002-2004 (PHY-0201740) “XENON: A Liquid Xenon Experiment For Dark Matter”
\$992,000

PATENTS

1993: E. Aprile and D. Chen, “A Vacuum UV Light Source Based on Rare Gas Scintillation Amplification Sustained by Photon Positive Feedback” (Columbia Office of Science and Technology Development Patent number 08/089,666).