Curriculum vitae: Anna Colaleo

Orcid: https://orcid.org/0000-0002-0711-6319
Scopus author: Scopus Author ID: 35227042600

My primary research field is experimental high-energy physics at accelerators. My contributions consistently revolve around designing, assembling, commissioning, and operating gaseous detectors in complex experimental environments. Additionally, I engage in reconstruction, data analysis, and paper reviewing. With managerial roles at local, national, and international levels, I have coordinated diverse teams of physicists, engineers, and technicians.

As a founding member of CMS since 1994, I've enjoyed tackling the challenges and excitement of detector R&D, subsequently engaging in the construction, commissioning, and data analysis. I've played pivotal coordination roles in the RPC and GEM projects. In 2014, I played a crucial role as one of the main proponents of the unification of the Muon System, consolidating four gaseous detector projects (DT, CSC, GEM, and RPC) into one Muon system. Advancing from Muon Upgrade Coordinator to Muon Resource Manager and ultimately to Muon System Manager, I facilitated collaboration to enhance synergy and mutual support among the diverse Muon projects while preserving their distinctive features and advocating for common solutions and objectives. I successfully steered the Muon group through the CMS and CERN approval process for the entire Muon Phase 2 Upgrade program (Technical Proposal, TDR, MoU), ensuring a seamless Run 2 operation and preparing for the startup of LS2 activities. Since 2020, I have served as the Chair of the CMS Muon Institution Board, a role I will hold until August 2024.

Since 2020, I have been participating in the definition of the ECFA Detector R&D Roadmap. Initially, I co-convened with Leszek Ropelesky the Task Force 1 for gaseous detectors, and together with a team of experts and community feedback, we successfully prepared the gaseous detector R&D roadmap. Later, we continued to convene the implementation group of the DRD1 team, steering the preparation of the DRD1 proposal towards the formation of the DRD1 Collaboration.

Beyond fundamental physics, I explore interdisciplinary projects, contributing to the design of detectors for clinical-diagnostic applications.

Main research and accademinc positions

- **1/03/2021 - now** Full professor at Dipartimento Interateneo di Fisica Università of Bari -Italy
- **01/2009-28/02/2021** Senior staff reasercher Istituto Nationale Fisica Nucleare (INFN) - Italy
- **04/2006 - 03/2008:** Project associate at CERN
- **1/01/2005 - 31/03/2006**: Scientific Associate at CERN
- **13/11/2003 -31/12/2008:** Staff reasercher Istituto Nationale Fisica Nucleare (INFN) - Italy

International roles and responsibility

Time	Coordination
2022 - now	Co-Coordinator of the **implementation team of DRD1 collaboration in the framework of the ECFA Detector R&D Roadmap for future applications**.

2021- 2022	Co-coordinator and main editor of White **paper "MPGD for muon detection at future colliders", The** Particle Physics Community Planning Exercise, **"Snowmass" Instrumentation Frontier**", organized by Division of Particles and Fields (DPF), American Physical Society.
2020-2021	**Co-Convenor of Gaseous detector strand (TF1) of the ECFA R&D detector roadmap panel Editor of "THE 2021 ECFA DETECTOR RESEARCH AND DEVELOPMENT ROADMAP"**

CERN CMS experiment (1994-now)

Time	**Coordination**
2020-now	CMS Muon Institution Board chair
2019-2020	CMS Muon Resource Manager
2017 - 2019	CMS Muon System Manager
2015 - 2018	CMS Muon Upgrade Coordinator
2016 - 2018	Manin Editor of "The Phase-2 Upgrade of the CMS Muon Detectors (CERN-LHCC-2017-012; CMS-TDR-016).
2015-2019	Coordinator at INFN-Bari of the search for highly massive resonances decaying into 2 muons (Z'_{SSM} or Z'_{Ψ} o Z'_{χ} models
2013- 2017	Coordinator at INFN-Bari of the search for Higgs →hh→ bbtau tau process in the MSSM theoretical framework
2015 - 2017	Deputy CMS Muon System Manager
2013 - 2015	Editor of "The Muon system" del Technical Proposal for the Phase-II Upgrade of the CMS Detector (CERN-LHCC-2015-10 LHCC-P-008 CMS-TDR-15-02 ISBN 978-92-9083-417-5).
2013 - 2015	Main editor "CMS Technical Design Report for the Muon Endcap GEM Upgrade" (CERN-LHCC-2015-012 CMS-TDR-013)
2013 - 2015	Coordinator of the Detector Performance Group (DPG) for the CMS GEM project
2013 - 2015	Resource Manager of the CMS GEM project
2011-2014	Coordinator at INFN-Bari of the search for the Standard model Higgs Boson in associated production with W boson and final states into two τ.
2011 - 2013	Resource Manager of the CMS RPC project
2009 - 2010	CMS RPC Deputy Project Manager
2007-2009	Coordinator at INFN-Bari of the muon and tau reconstruction and identification algorithms.
2006 - 2008	CMS RPC Technical Coordinator
2004 - 2008	CMS RPC Safety link person
2003 -2004	Member of CMS Technical Coordinator panel
2003 - 2008	Coordinator of tests and QA/QC of RPC Barrel detectors during construction phase
2003- 2009	Installation Technical Coordinator and commissioning coordinator of the CMS RPC system
2002 - 2004	Coordinator of aging tests at CERN Gamma Irradiation Facility of final RPC prototype
1999 - 2001	CMS muon barrel test beam deputy coordinator
1994 - 2003	CMS RPC R&D and test beam coordinator

CERN ALEPH experiment (1994-2000)

Time	**Coordination and activity**

1998-2000	Coordinator of the ALEPH task force for the search for charginos with LEP2 data

Italian National Reasearch responsibility and scientific committee

Time	Coordination
2020-2022	Bari institution leader of the Muon Collider proto-collaboration
2014 - 2019	Referee of Compass experiment for the INFN National Scientific Committee for Particle Physics
2011 –2019	Referee of UA9 experiment for the INFN National ScientificCommittee for Particle Physics (
2011– 2019	Coordinator of Particle Physics activities of the Bari Group and member of National Scientific Committee for Particle Physics at the accelerators
2013 - 2015	coordinator of INFN CMS GEM activities
2011 - 2013	coordinator of INFN CMS RPC activities

Participation in National and European funded project

- PRIN 2022 (Italian Projects of National Relevant Interest): Development of Ultra-fast Perovskites ScinTillAtoR for TOF-PET (UPSTART)
- PRIN 2022 (Italian Projects of National Relevant Interest) CALORHINO: An innovative and radiation hard calorimeter for a future muon collider experiment
- (2015-2019) AIDA_2020 -WP13 "Innovative gas detectors" – H2020 project Advanced European Infrastructures for Detectors at Accelerators
- (2011-2013) AIDA WP.8 "Improvement and equipment of irradiation and test beam lines. Subtask 8.5.3 - GIF++ user infrastructure". H2020 project Advanced European Infrastructures for Detectors at Accelerators
- PRIN (Italian Projects of National Relevant Interest) 2008: Title "Design, characterization and performance study of large size GEM detectors and their readout system for the optimization of particle tracking systems".
- PRIN (Italian Projects of National Relevant Interest) 2003: Title "Study of Resistive Plate Chambers and gas mixtures under high particle flux conditions"; 1998: Title "Study of RPC performance under high gamma ray fluxes and optimization of readout electronics."

Teaching

Since 2013, I've been a member of the Physics PhD School Board at the University of Bari.
From 2021 onwards, I have been teaching courses in elementary particle physics, collider particle physics, and relativistic kinematics of particle interactions as part of the Physics Degree program at Bari University. I've supervised 16 Master's and 14 PhD theses, focusing on topics such as detector performance (RPC, GEM), muon reconstruction and ID, and various physics analyses.