



UNIVERSITÀ  
DEGLI STUDI DI BARI  
ALDO MORO



# Anna Colaleo

Candidate for DRD1 Collaboration Board Chair  
1/2024 – 12/2026

## Experimental high-energy physics researcher:

- Contributions in designing, assembling, commissioning and operating gaseous detectors.
- Contribution to muon reconstruction and data analysis
- Supervisor of 16 degree and 15 PhD theses on detector R&D, muon reconstruction, data analyses.
- Managerial roles at national, and international levels

## Main Detector related activities and roles

### Aleph experiment

- **1993-2000:**
  - DAQ for back-end electronics of HCAL and Muon chambers (**larocci tubes**) at LEP200

### CMS experiment

- **1994-2013:**
  - **RPC** R&D and test beam coordinator
  - Responsible for the final validation and commissioning of the Barrel **RPC** system
  - **RPC** Technical Coordinator, RPC Resource manager, Deputy RPC Project Manager.
  - **RPC** Italian representative
- **2013 – 2015**
  - Engaged in detector R&D and performance studies toward approval of **GEM** in CMS.
  - **GEM** detector Performance Group coordinator, GEM Resource Manager
  - Main Editor of **GEM TDR** → approval process
  - **GEM** Italian representative

# My Research and Experience

## CMS experiment

- **2015 – 2019**

crucial roles in unification of the **Muon System**, consolidating four gaseous detector projects (**DT, CSC, RPC, and GEM**) into one Muon system.

- Muon Upgrade coordinator, overseeing approval process of **Muon Phase2 Upgrade**, including **MoU approval**
- **Muon** resource manager, **Muon** System Manager

- **2020– 2024**

Chair of CMS **Muon** Institution Board

## Detector R&D for future experiments and applications

- **2020 – now**

- **Co-convener of TF1** for gaseous detectors for ECFA Detector R&D roadmap definition
- **Co-convener of DRD1** Collaboration implementation group.
- Co-coordinator and main editor of **the Snowmass White paper "MPGD for muon detection at future colliders"** in the Instrumentation Frontier (2021-2022)
- Proponent of a future **Muon collider experiment: MPPGD based calorimeter and muon system**
- R&D of heterostructures based on nanomaterials for detectors in HEP and medical applications.

## Building-up DRD1 Collaborative framework

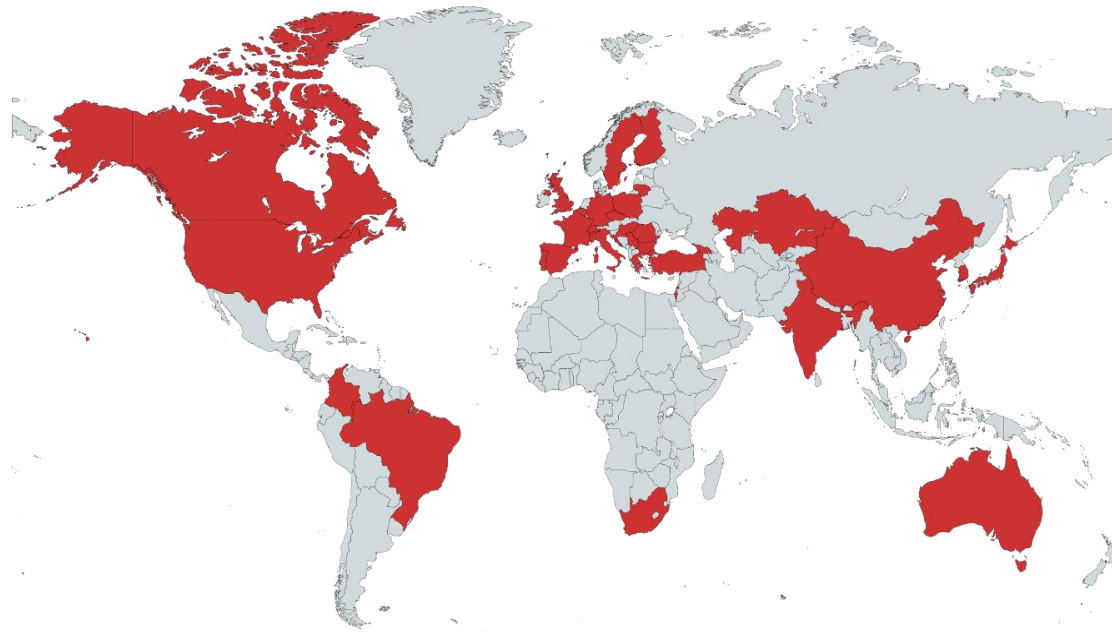
**I am very proud of the DRD1 proposal, especially the process and teamwork that led to its finalization**

- in recent years, support for gas detector technologies has diminished, making it increasingly challenging to secure funding from funding agencies.
- From the start, I emphasized the importance of the inclusion of all technologies. This approach involved stakeholders across diverse communities, promoting a unified and motivated community.

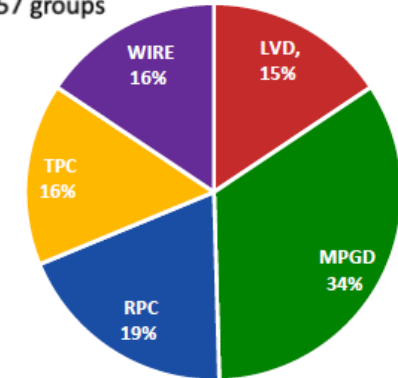
**During DRD1 proposal preparation, we successfully fostered a collaborative spirit.**

- DRD1 benefits from on its rich diversity: wide array of technologies, research fields, and regional characteristics

The roots of  
strong  
DRD1  
Collaboration



224 Entries in total  
157 groups



- >700 participants from 157 institutes in 33 countries
- + 4 Industrial, Semi-Industrial partners and Research Foundations

# The roots of strong DRD1 Collaboration

## DRD1 as an Opportunity

- The collaborative spirit, which was integral to the preparation of the DRD1 proposal, sets a strong foundation for the future development of the collaboration.
  - **Shared Scientific Objectives:** common interest in applications, WG activities, blue-sky R&D.
  - **Shared Sense of Ownership:** Actively encouraging participation and engagement from all members.
  - **Shared Sense of Responsibility:** Cultivating a collective commitment.
  - **Shared Sense of Success:** Recognizing success as an outcome of collaborative efforts.
  - **Shared Culture:** Support the diverse cultural backgrounds in our identity.
  - **Shared Respect:** Create an environment where every voice is heard and valued, promoting respect for diverse perspectives, experiences, and contributions.

# Vision for future DRD1 Collaboration

## DRD1 as an Opportunity

- **Bottom-Up Process and Collaborative Framework:**
  - Advocating for a **bottom-up process** to address challenges and goals in R&D outline in WP
  - Promoting a **collaborative framework supporting 'blue-sky' generic R&D**
  - Enhanced detector R&D opportunities by **training new people and involve new institutes**
- **Global Network Integration is the foundation of Working Groups framework:**
  - Establish DRD1's **extensive international network of experts in different area**
  - Building **collaboration between research laboratories and institutes**, enhancing access to state-of-the-art testing facilities to all groups.
  - Access to diverse expertise and **advanced engineering support**
  - Encouraging knowledge **exchange and cross-cultural collaboration**
- **Facilitating Research Initiatives:**
  - Supporting **national and international research initiatives:**
    - Application to diverse funding schema in the framework of WPs or WGs
    - Creating a **platform for joint projects**
    - Encouraging **diverse contributions from international partners and industrial, semi-industrial partners.**

# Vision for future DRD1 organization

- **Played an active Role in current Organizational Development**
  - **Working Groups (WGs) as Collaborative Pillars**
    - Established Working Groups as the foundation of collaborative efforts
  - **Creation of Diverse Work Packages (WPs)**
    - Developed Work Packages for diverse applications proposed by the community
    - Embracing ideas beyond ECFA applications for a comprehensive approach
  - **Creation of Common Projects (CPs)**
    - Fostering novel ideas especially if proposed from young researchers
- **Impartial Management and Diversity in management team**
  - Ensuring the organization facilitates a **management team that reflects the broad diversity** of technologies and the community
  - Fostering a collaborative culture that **values diversity and inclusivity**.
- **Flexibility in Internal Organization**
  - Advocating **for flexibility within internal group structures**
  - Allowing for **cross-connections within WPs and WGs**

## Supporting Diverse R&D Initiatives and Nurturing young R&D experts

- **Critical Mass for R&D Success in WP framework:**
  - Acknowledging the **necessity of resources, skills and participants**.
  - Crucial **contribution** of participating institutes **within the WP and WG activities**
- **Preserving research freedom :**
  - Pledging comprehensive **support without compromising research independence**.
  - Preserving the **freedom to explore new ideas** and pursue blue-sky projects.
  - Fostering a culture where project failures are opportunities for innovation
- **Career opportunity for R&D experts**
  - DRD1 represents a significant **opportunity for young colleagues** dedicated to detector R&D and not involved in large international experimental collaborations.
  - It offers a chance for their work and contributions to be recognized on an international scale.
    - DRD1 should enhance the **visibility** through publications within Work Packages, Common Projects, etc., and create opportunities for their participation to the conferences
    - Ultimately it **create career opportunities** for them



# Synergy with other fields and DRDs

- **Collaboration with Other DRDs:**
  - Acknowledging the **potential for mutual benefits** through collaboration with other DRDs.
  - Exploring opportunities for **knowledge exchange and collaborative initiatives**.
- **Attractiveness to Adjacent Fields:**
  - Encouraging a collaborative spirit that transcends disciplinary boundaries.
  - Ensuring that the DRD1 Collaboration is **attractive to groups from adjacent fields**, such as nuclear physics, astrophysics, social applications
- **Opportunity for Knowledge Exchange and Career Development:**
  - Highlighting the excellent opportunity for knowledge exchange.
  - Providing a **platform for career development** through opportunities in diverse research domains.

# Collaboration Board (CB) Role

- **Highest Decision-Making Body:**
  - Responsible for approving all significant decisions.
- **Consensus-Building Entity:**
  - The CB doesn't have an executive role but acts as a consensus-building entity.
  - Commits to a well-defined decision-making process.
- **Decision-Making Process:**
  - **Clear Approval Steps:**
    - Decisions will follow a clear and transparent approval process.
    - In-depth consultation and open discussion will precede significant decisions.
  - **Protecting DRD1 Interests:**
    - Consensus is crucial for a coherent voice and to protect DRD1 interests.
    - Open-mindedness balanced with safeguarding the autonomy of DRD1 Collaboration.

# Collaboration Board (CB) Role

- **Define Official Procedures for Collaboration Growth:**
  - Ensuring a structured approach for **integrating newcomers** into the DRD1 Collaboration.
- **Efficient Resource Pooling:**
  - **Mediate interaction with Funding Agencies.**
  - Encouraging **joint projects**, including CP and WP, to **maximize collaboration benefits.**
- **Advocacy for Long-Term Funding:**
  - Advocating for research plans that **attract long-term funding**, ensuring sustainability in addressing future technical challenges.
- **Building Strong Relationships:**
  - Building **strong relationships between institutes**
  - Promote **collaborations with industrial partners** to enhance research potential.
- **Increasing Research Potential, Reducing Costs:**
  - Strategically aligning **efforts to reduce costs through collaborative initiatives**

# Role of the CB chair

- **Engage collaboration**
  - through dedicated discussions with CB members
- **Monitoring Progress:**
  - Commitment to monitor progress and **safeguard CB choices**.
  - Ensuring adherence to agreed-upon plans and maintaining decision-making independence.
- **Connectivity with DRD1 Management and scientific Bodies**

**Respectfully for the different roles**, the CB Chair acts as a crucial [link between the Collaboration Board and the Management Board and other Scientific bodies](#)

  - Committing to ensuring the efficient operation of these bodies, encouraging collaborative decision-making processes within them.
  - Providing necessary **support to MB** to address specific collaboration challenges.
  - Ensuring flexibility to address institute-specific challenges.
- **Negotiations with Funding Agencies:**
  - Offering **support in negotiations with funding agencies**.
  - Ensuring final funding agreements align with DRD1 collaboration objectives.

## Promoting Inclusivity and Recognition

- **Equal Opportunities for All:**
  - Ensuring **equal opportunities** for every institution to contribute based on its capabilities
  - Increasing **visibility and recognition** of institutional contributions.
  - Guaranteeing a **fair share of coordination responsibilities**
- **Geographical and Managerial Diversity:**
  - Spanning different geographical regions and managerial positions.
  - Encouraging **responsibilities assigned to young colleagues**.
- **Visibility and Transparency:**
  - Ensuring **visibility for young talents** in the collaboration.
  - Emphasizing **transparency in appointment** processes for fairness and equity.

# Role of the CB chair

## Communication

- **Transparency**
  - Adequate and **transparent communication** is paramount within the CB.
  - Ensuring all **CB members are well-informed and engaged** in the decision-making process.
- **Efficient Formal Endorsements:**
  - Circulating **meeting agendas** well in advance
  - Facilitating efficient **formal endorsements** of proposals and decisions.
- **Written Documentation:**
  - Ensuring **dissemination of decisions** for clarity and accountability.
  - Providing **written documentation**, including minutes.
- **Structured Information Flow:**
  - Implementing a structured information flow for streamlined communication.
  - Prioritizing **wide consultations** within the Collaboration Board to address any pertinent issues.

## Closing Remarks

- A great honour for me that I have been nominated for the position of DRD1 Collaboration Board Chair
- It would be the ultimate honour for me to serve this great collaboration as DRD1 Collaboration Board Chair, working closely with all of you to help keep gaseous detectors at the forefront of particle physics