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FERMI NATIONAL ACCELERATOR LABORATORY

CMS Spokesperson (SP) Election Statement

What often comes to mind when I think of CMS is the strength that international collaboration brings to science. CMS has had many successes because it attracts a talented and diverse group of scientists, engineers, technicians, programmers, administrators, and students from around the world. These interconnected groups have joined forces to build, operate, and now upgrade the CMS detector and its computing systems, and analyze the abundant data the detector has produced. We share a common goal: to uncover the nature of high energy collisions at the LHC and to develop world-class physics results. The collaboration has had an amazing journey so far; my goal is to ensure that this journey continues along a strong, diverse, innovative, and productive path throughout the 2020's — and beyond.

The CMS collaboration brings together people from more than 230 institutes and from more than 50 countries to build and operate its magnificent detector, which has led to over 950 first-class publications. Our continued success depends on the strength and success of the individuals in the collaboration, the individual scientists, the individual institutes, the individual nations. Each member brings talent and enthusiasm for the physics and for the technologies needed by CMS. As SP I would strive to enable the collaborators to reach their scientific, technical, and career goals. I would maintain the strong partnership with the Collaboration Board and its committees in order to strengthen the in-reach to collaborators around the world.

Since becoming Deputy Spokesperson of CMS, I have learned a great deal about the strengths of CMS and its challenges. I recognize the value of a strong CMS leadership team and for the capabilities needed to guide the experiment through very difficult technical challenges. With a collaboration this large, things unfold at a rapid pace and in many places around the world. It is, therefore, imperative to provide the right environment to foster dialogue and discussion. Communication is key. Fortunately, modern technology has enabled us to remain connected despite the long distances and the diversity of time zones, but there is always room for improvement. I will continue to work to improve the web presence of CMS (a work in progress) and look for new technology to enhance collaboration.

One of the challenges of the next couple of years will be the preparation for LHC Run 3. The demands of the new data taking period will compete with the completion of Run 2 publications. Simultaneously, the Phase-2 detector upgrades will be ramping up. If CMS is to remain an intellectually vibrant collaboration, all of these activities have to succeed. It is imperative that the CMS management team discusses strategies and priorities broadly throughout the collaboration as they strive to reach an effective balance between the competing activities. The Weekly General Meetings (WGM) and plenary presentation during CMS Weeks are a good start, though I recognize the need for creative ideas to re-vitalize the former. In addition, I am committed to engaging in regular chats with area representatives and more informal chats with early career scientists.

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Run 3 will be a new era for CMS since it will take longer to double our integrated luminosity. I would encourage the collaboration to continue to push the envelope in the exploration of novel techniques and entirely different approaches to experimental particle physics, broadly construed, that highlight the strengths of the CMS detector and uses it to its best advantage. I would also encourage the development of bridges to the theory community, perhaps through quarterly talks/mini-workshops in place of the WGM.

HL-LHC preparations are already moving ahead at a fast pace. Many of the Phase-2 upgrade projects will transition into the pre-production or production phase in the next few years. CMS, fortunately, has strong detector project teams with excellent track records, but the upgrades will require a strong, flexible CMS organization at all levels. We already have an excellent Upgrade Project Office to guide the process. The SP team already works closely with Upgrade Coordination, Technical Coordination and the sub-detector leadership to ensure that enough resources are available within the collaboration to complete the upgrades successfully. It is vital that this close partnership continues in order to achieve success and minimize risk.

CMS is leader in LHC computing and software and will keep innovating in these areas in order to remain successful when the flood of data from Run 3 and the HL-LHC era arrive. The preparations that are already underway make me optimistic that CMS can meet this challenge, daunting though it is. I will support the partnerships both across collaborations and globally that may prove necessary to develop the computing and software systems that will be viable for data processing through the HL-LHC era.

I have many years of management experience within CMS and at Fermilab. I've managed large and small groups of scientists; computing professionals and engineers; I've worked in a number of technical areas including muon detector construction and operations, as well as scientific computing and simulations. I believe this diverse experience has helped me prepare for the complexity of managing a large international collaboration. Moreover, I've worked in an international environment most of my career. I've pushed for the principles of inclusion and diversity in particle physics through my work and leadership in IUPAP and the APS and I intend to work these same values and principles into the management of CMS at all levels.

Early career researchers are critical to the success of CMS and the collaboration needs to recognize their contributions and the visibility they deserve. They should have every opportunity to develop the skills needed to have a career in the modern technology and data-driven world. I will fight to give them the best chance of success in their careers and I will work hard to make CMS a once-in-a-lifetime exciting voyage of discovery for everyone.

In short, I would work with my colleagues from around the world in order to maintain the scientific excellence of CMS. I would work to humanize the interactions among CMS members and help them reach their goals.
