

Statement for the Muon ICB Chair Election
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I am currently the work package manager for the beam physics within the accelerator project at the European Spallation Source, ESS, where since 2009 I have led the beam physics design of the linac, including designing, studying, and optimizing what will ultimately be the world's most powerful proton linac. The goal was both on delivering a “ready for construction” physics design, with realistic capital investment and improved energy consumption. Since 2018, I have also been the linac upgrade work package manager for the ESS neutrino super beam, ESSnuSB, a feasibility study for the upgrade of the ESS linac to provide an additional 5 MW of beam power to a dedicated accumulator ring and a target facility for studies of the neutrino oscillations at the second maximum. These have equipped me with extensive experience working in large international collaborations, as well as driving and aligning multiple stakeholders with a wide range of expert competencies.

“One ring to rule them all” is how some referred to LHC in the early years as it increased the collision energy ever achieved by one order of magnitude. Today, there are proposals for proton colliders that would increase the collision energy by another order of magnitude. Similarly, there are detailed studies for electron-positron colliders of the TeV scale. Looking at either the dimensions of any of these proposals, their energy consumption, or the possibilities they open up, regardless of what project is eventually selected for construction, it will probably be the last “large accelerator” humans can build and likely the end of accelerators for particle physics. I believe that the muon collider, which has seen lately a revived interest from the community as a result of recent achievements by several collaborations on R&D projects, is our only viable way forward with great potential for high-energy physics. However, unlike the other collider types which are the bigger versions of what we have been building since 1961, delivering the muon collider requires a paradigm shift, as the system's complexity needs collaboration among different stakeholders, different laboratories, institutes, and universities beyond national and continental boundaries.

As the chair of the Muon Collider International Collaboration Board, I would be assisting and enabling the stakeholders within the collaboration, for setting up internal structures to help the collaboration grow, whether by welcoming new members or seeking opportunities for young promising scientists. I bring the experience of two collaborations on large and complex projects in which I have been heavily involved in. I believe strongly that my broad expertise in the field, my network within the accelerator community, and my personal way of working are assets that will allow me to bring colleagues together, settle our differences and harmonize our communications. In addition, as I am in the middle of my career, my energy, enthusiasm, and passion have not yet dwindled and I am still mesmerized by the beauty of the muon collider just as I was in my early years in accelerators. I would love to contribute to the project in any capacity.

Sincerely,
Mamad Eshraqi
Work package leader for beam physics
Accelerator Division, ESS
More information: [LINK](#)