

Draft US Muon Collider Collaboration (USMCC)

The United States Muon Collider Collaboration (USMCC) is an organization of individuals interested in designing and promoting the construction of a multi-TeV muon collider in the United States. The USMCC will also work closely with International Muon Collider Collaboration (IMCC) hosted at the European Laboratory for High Energy Physics (CERN) in realizing a muon collider, wherever it is built in the world.

The USMCC will be hosted by the Fermi National Accelerator Laboratory, which will oversee its affairs, including financial responsibilities.

Membership

The USMCC is open to all members of the high energy physics community, accelerator physicists, theoretical and experimental particle physicists and professional engineers working at universities, laboratories and participating industry partners. Student members of the USMCC must have approval of their PhD supervisor. The USMCC will maintain a database of its membership, including pertinent information about the members, which shall be publicly viewable, in compliance with the host lab policies.

Administrative Institutional Contacts

Each member of the USMCC should identify their academic status, professional title in their organization, the department and the institution that they belong to, the fraction of their research time devoted to the USMCC, and are responsible to keep it updated in the USMCC database as their professional status changes. All members of the same department are required to keep up-to-date information regarding their administrative institutional contact. The Administrative Institutional Contact should be authorized to verify that the person concerned is authorized to engage in the USMCC work.

Leadership Council

The leadership of the USMCC consists of a Spokesperson, a Deputy Spokesperson, a Physics Studies Coordinator, an Accelerator Design Coordinator, a Detector Design Coordinator, a Machine-Detector Interface Coordinator, a Software & Computing Coordinator, a Communications Coordinator and a Diversity-Equity-Inclusion-Access Coordinator. Together these nine members form the Leadership Council of the USMCC. The Coordinators will organize work in their areas and appoint other members of USMCC to assist them as needed. The Leadership Council is responsible for ensuring that any appointments made by the

coordinators adhere to the collaboration goals of broad diversity, equity, inclusion and access. The Leadership Council should report their progress to the USMCC monthly electronically, and annually in a collaboration wide meeting.

Spokesperson

The spokesperson (SP) of the USMCC serves as the Chair of the Leadership Council. The SP together with the rest of the Leadership Council will identify the overall directions to be taken by the USMCC in realizing the vision of a multi-TeV muon collider in the United States. The SP represents the USMCC interests to the host laboratory, the high-energy physics community and the public at large. The SP will also liaise with the funding agencies until sub-projects are formed and funded, It is the duty of the SP to keep the broader USMCC collaboration informed of important news and the directions taken. The SP shall collect information from all members of the Leadership Council monthly and prepare a report to the USMCC. The SP shall also organize an annual meeting of the full USMCC. The SP will also serve as the chief liaison to the IMCC leadership.

Deputy Spokesperson

The deputy spokesperson (DSP) will assist the spokesperson in discharging the SP duties, by participating in all aspects of the USMCC work. The DSP is also charged with keeping the notes of all important meetings and making their excerpts available broadly to all of the USMCC. The DSP also serves in the SP capacity when the SP is unavailable temporarily.

Physics Studies Coordinator

The USMCC physics studies coordinator (PSC) will organize the efforts of the collaboration to provide physics studies that influence both the machine and the detector design. The PSC is responsible for ensuring that the physics simulation studies are validated for accuracy with detailed discussions in organized meetings. The PSC is charged with keeping track of the collaboration interests and organizing work so that the studies are conducted in an optimal way. The PSC should ensure that opportunities for physics studies are available broadly to all members of the collaboration. The PSC should work with other coordinators to ensure that the software tools and data sets are available and used appropriately.

Accelerator Design Coordinator

The USMCC accelerator design coordinator (ADC) will organize the efforts of the collaboration in designing multi-TeV accelerator options, with sufficient luminosity, for hosting in the USA. The ADC will also help define the US accelerator contributions to the IMCC led activities. The ADC will review the status of the accelerator subsystems regularly, including recent technical developments and inventions, to manage potential changes in directions. The ADC will

coordinate the efforts at all national accelerator laboratories, and will also bring in the participation of university scientists and students.

Detector Design Coordinator

The USMCC detector design coordinator (DDC) will organize the efforts of the collaboration in designing detector options suitable for the environment of the muon collider. The DDC will also help define the US detector contributions to the IMCC led activities. Development of simulation programs to qualify the detector subsystems is part of the DDC responsibility. The DDC will review the status of the detector subsystems regularly, including recent technical developments and inventions, to manage potential changes in directions.

Machine Detector Interface Coordinator

The USMCC machine detector interface coordinator (MDC) will organize efforts to quantitatively understand through simulation the physical environment in the detector area due to the accelerator related backgrounds. The MDC will also help define the US MDI contributions to the IMCC led activities. The MDC is also responsible for designing suitable shielding, especially its geometry to minimize the adverse effects in detector acceptance, while maintaining sufficient headroom for detector occupancy and radiation damage.

Software & Computing Coordinator

The USMCC software and computing coordinator (SCC) will organize software development and computing resources for all four areas, physics studies, accelerator design, detector design and machine-detector interface. The SCC is responsible for ensuring that the software and computing resources are available in a timely way for the collaboration to produce required results for all foreseen technical reviews.

Communications Coordinator

The USMCC communications coordinator (CC) will organize communications with the public at large, the broader physics community and the HEP community. The CC will also be responsible for maintenance of outreach materials for each case, and organize opportunities for the USMCC personnel to present the USMCC case in presentations at various events, conferences, colloquia and seminars. The CC will also coordinate with other agencies regarding the annual visits to Washington to promote our science case.

DEIA Coordinator

The USMCC Diversity, Equity, Inclusion and Access (DEIA) Coordinator shall be responsible for ensuring that there is diversity, equity, inclusion and access of all USMCC members. The DEIA Coordinator shall be responsible for monitoring the status of DEIA in the collaboration. The

DEIA is charged with reporting the findings over the year at the annual collaboration meeting. In case of disputes the DEIA Coordinator is also charged with providing advice to both the Leadership Council and the affected USMCC members to mitigate any problems.

Elections

The voting members of the USMCC constitute those PhD physicists and professional engineers devoting 10% or more of their time in the USMCC efforts. Each member receives one vote in all USMCC elections. The voting members select the members of the Leadership Council. The winner is required to have 50% or more of the votes cast in favor, excluding those who abstain. In cases where there is no winner, a run-off election of the top two is triggered. In case of a tie, the Leadership Council, excluding the position for which the election is tied, will cast the tie-breaker vote.

On occasion votes are also requested for the USMCC members to indicate their opinion on matters referred to them by the Leadership Council. The Leadership Council is required to go by the opinion of the collaboration if 50% or more votes are cast in favor of that opinion. If there is no option with over 50% votes in favor, a run-off election with top two options will be conducted. In case of a tie between the last two options, the leadership council can use their judgment to resolve the issue.

Election Coordinators

Two members of the USMCC, who do not wish to run for the leadership positions of the USMCC that year, will serve as the election coordinators for the year (EC). The EC, SP and DEIC together vet the membership database annually. The EC conducts all coordinator polls, except for the EC selection poll itself, for that year using electronic means. The EC also keeps track of the nomination statistics in a non-public database.

The election starts with a call for nominations for available positions with a two-week nomination period. The EC contacts all those nominated to select the slate of candidates for the position to confirm their candidacy. The list of candidates nominated may be divulged to all candidates nominated for the position if asked by any one nominee.

Diversity in the choice of the leadership council is important. As such the EC is charged to work with the DEIA Coordinator to ensure that there is sufficient diversity in the nominations to start with, and making efforts to persuade those who are nominated to actually run if diversity is at stake. For instance, the goal should be to balance the leaders from the universities, national laboratories and the host laboratory. If the slate of candidates is deficient, an extension of the nominations call for five working days can be initiated at the discretion of the EC.

The EC are required to report to the USMCC, in an email, the nomination statistics, including all those who were nominated, before the election begins. The EC should collect and provide

1-page write ups and 10-minute clips of video/audio recordings or a slide deck from each candidate to the USMCC 1-week prior to the start of the election.

Annually, the DSP seeks nominations for the following year's EC from the USMCC membership, and conducts a poll to select the next year's pair of EC. The top two vote getters of the EC-poll are chosen as the next year's EC. The initial EC pair is chosen by the interim leadership council.

Eligibility

Any USMCC voting member is eligible for the Leadership Council position. It is expected that the nominees are able to devote 0.25 FTE effort to the USMCC affairs.

Terms and Term limits

The leadership council positions have a nominal term of two years, starting in January, with a limit of two terms, unless the person is elected to complete a term of less than 1.5 years.

Incomplete Terms

In case a person is unable to complete a term for whatever reason, a new election for the position is called. The term of the position can be the remainder of the term if more than 1 year remains, or otherwise remainder of the term plus the nominal 2-year term.

Recall of Officers

A recall of leadership council officers can be triggered upon the written request from 10% of the USMCC voter list to the EC. The EC will then conduct a recall poll. A recalled officer may no longer serve in the Leadership Council. A recall triggers a new election for the completion of the term for that position.

Diversity, Equity, Inclusion and Access

Gender, geographic, ethnic, race and country-of-origin, diversity is paramount to the success of the US Muon Collider Collaboration. The collaboration is required to provide an equitable and inclusive access to all areas of the USMCC affairs, for their collective success. A code-of-conduct should be developed and ratified in the first year of the adoption of this constitution. A mechanism for routine monitoring of DEIA considerations to address any violations of the code-of-conduct should also be established by the elected DEIA Coordinator. The DEIA Coordinator shall attend the leadership council meetings regularly, and especially when discussing the appointments of unelected secondary officers in all areas, to advise on DEIA issues. All coordinators at any level in the collaboration are responsible for ensuring that

the code of conduct and the principles of DEIA are upheld in their areas, and for bringing violations of the code of conduct to the DEIA Coordinator.

Subgroups

Each of the coordination areas: physics studies, accelerator design, detector design, machine-detector interface and software & computing, will require subgroups to cover all aspects involved within those broad categories. The coordinators are charged with defining their group structure, their mandates and appoint conveners of those groups. In filling the convener positions they are required to seek nominations from the USMCC broadly, by advertising the convener roles and experience requirements. They are also required to work throughout the process of identifying people with the DEIA-coordinator, to ensure broad diversity amongst the appointees in all subgroups.

Projects & Project Managers

In the coming years, we anticipate that there will be several projects, requiring line management and host-laboratory oversight. Such appointments are typically made by the Host Laboratory Director following the recommendation of the collaboration and endorsement of the funding agencies. We envision that the USMCC elected Leadership Council forms a Search Committee which seeks nominations, interviews the candidates and selects top two or three candidates and recommends them to the Host Laboratory Director. The Host Laboratory Director will make the Project Manager appointment with the endorsement of the funding agencies.

Adoption of the Constitution

Adoption of the constitution and any future amendments require two-thirds majority of the votes cast, excluding abstain votes.