

Governance of the DUNE Collaboration

(Version 5)

Last amended on [30 January 2018]

The DUNE Collaboration

Dune-docdb-1

Table of Contents

Preamble

1 Preparation, Approval and Amendments of the Agreement

2 Collaboration membership

3 Institutional Board

4 Co-Spokespersons

5 Deputy Spokesperson

6 Executive Committee

7 Collaboration General Assembly

8 Young DUNE

9 Technical Coordinator and Resource Coordinator

10 Other Management Structures

11 Dissenting opinions and Procedure to Appeal

12 Attachments

Records of drafts and amendments

Preamble

The Deep Underground Neutrino Experiment (DUNE) is a multi-purpose neutrino and nucleon decay experiment that will use the Fermilab accelerator complex, a neutrino beam line, a near detector complex, and a far detector composed of a set of large liquid argon TPC's situated deep underground at the Sanford Underground Research Facility, Lead, South Dakota, U.S.A. The DUNE experiment will be designed and constructed by the collaborating institutions (The DUNE Collaboration). This document, "Governance of the DUNE Collaboration" (GDC) provides a formal framework of the governance of the DUNE Collaboration. The participating institutions and collaborators recognize that the DUNE experiment is an exciting and important experiment that must be designed, constructed, operated and completed successfully. Thus, all participants agree that they will do their best to collaborate in a congenial and constructive manner beyond the language of this document for the ultimate success of the experiment. The relationship between the Long-Baseline Neutrino Facility (LBNF) and the DUNE collaboration as well as their respective roles are described in the DUNE/LBNF Project Management Plan (See Attachment A.1).

Article 1

Amendments of the Agreement

Amendments to this document can be made as needed by a 2/3 majority vote by the DUNE Institutional Board (IB), which is defined in Article 3. The proposed amendments must be announced at least two weeks ahead of an IB meeting and the outcome will be determined by a vote.

Article 2

Collaboration Membership

§ 2.1 Membership of the DUNE Collaboration

Members of the DUNE collaboration must be affiliated with collaborating institutions. The IB representative for an institution has the following responsibilities: (1) determination of the list of DUNE members at the institution; (2) notifying the IB Chair of any changes to institutional membership; (3) ensuring that members of the institution fulfill agreed commitments to DUNE.

§ 2.2 Admission of New Institutions and New Senior Members to DUNE

A prospective new institution, after conferring with the Co-Spokespersons, will submit a written application to the IB Chair and to the Co-Spokespersons at least two weeks prior to the meeting of the IB at a scheduled IB meeting. The application will include a proposal stating the intended contributions that the prospective institution is proposing to make to the experiment and a well thought out plan for the group's effective participation in the experiment, and include CV's and past research experience of the proposed senior members (faculty or equivalent) from the institution. For a successful application, there must be at least one senior member in the institution who proposes to join. The IB Chair will circulate the application materials to the IB members prior to the meeting and put consideration of the application on the agenda of the IB meeting, which will include a presentation by the prospective institution. The IB may ask for verbal or written clarifications of items in the application. The IB may: (1) approve the proposal and formally admit the institution to the Collaboration, (2) request written clarifications to be considered at the next IB meeting, or (3) reject the proposal.

IB approval should be sought if new persons of rank equivalent to faculty at a member institution wish to join the collaboration.

The IB will attempt to make decisions on admission of new institutions or new members by consensus. If consensus is not possible, an open vote will be taken on admission. Admission will require a 2/3 majority vote, in favor of the application, of those representatives with the right to vote present and voting (an abstention is not a vote for this purpose).

Existing senior members of the collaboration who move to a different collaborating institution should notify the IB Chair and Co-Spokespersons but do not require IB approval to change their DUNE institutional affiliation.

§ 2.3 Secession from DUNE

An institution may leave the collaboration by notification to the IB chair. However, the items contributed to the experiment by the out-going institution that are not covered by any relevant MOUs may not be removed without an approval by the IB.

§ 2.4 Removal of Institutions from DUNE

Removal of an institution from DUNE can be proposed by any IB or Executive Committee member for actions by the institution that are judged to be gravely detrimental to the experiment or for no activity in the experiment by the institution for more than one year. An open vote will be taken on removal. Removal will require a 2/3 majority vote, in favor of the removal, of those representatives with the right to vote present and voting (an abstention is not a vote for this purpose).

Article 3 Institutional Board (IB)

§ 3.1 Role of the Institutional Board

In general the Institutional Board is responsible for establishing governance rules of the DUNE collaboration and regulating the governance related issues. The responsibilities of the IB include, but are not limited to: admission of new collaborating institutions and members; oversight of Co-Spokesperson election process; election of at-large members of the Executive Committee; approval of common funds assessments; establishment and governance of detector operations shifts; and establishment of procedure for publication of scientific results and authorship rules. IB can request presentations on and discussion of specific issues relating to the collaboration or the experiment. The results of such discussions may be recorded and passed to the Co-Spokespersons as formal advice.

§ 3.2 Membership of the Institutional Board

All collaborating institutions except the host lab will be given one seat in the IB regardless of their varying sizes. Fermilab will be given two seats to reflect the lab's large DUNE membership as well as its role as the host lab of the DUNE experiment. Each institution designates its IB representative.

§ 3.3 IB Voting

In general, the IB will attempt to make decisions by consensus. If consensus is not reachable, the IB can have open or secret votes on various issues. Normally, IB votes will be open votes and each IB member's vote will be counted as one vote regardless of the number of collaboration members they represent. On issues deemed to be sensitive the IB can decide to have a secret vote,

which can be triggered by a motion by any IB member. The IB will then decide whether to have a secret vote or not on the issue by an open vote. Even for secret votes, the “one IB representative, one vote” principle will normally apply. For exceptional cases, the IB can decide to have a secret vote that is weighted by the number of collaboration members (eligible voters for general election) each IB member represents, following the procedure described above.

Any IB representative that attends an IB meeting physically or virtually will be considered present for that meeting. For votes conducted during a scheduled IB meeting, representatives of the IB must be present to vote; if unable to attend, a member may designate another collaboration member from their institution to attend by notifying the IB chair. In general, votes may be conducted electronically, unless otherwise specified in this document. Requirements for an ordinary (more than 1/2) or extraordinary (2/3 or more) majority will be taken with respect to all votes cast.

Any motion made at an IB meeting requires the motion be seconded by another IB member in order to go forward.

§ 3.4 Chair and vice-chair of the Institutional Board

The IB Chair is elected by the IB for a two-year term. The term is renewable. The IB Chair election process should commence in March in the election year. The IB Chair election will be carried out by an IB-appointed ad hoc three-member election committee. The election committee members may not stand for the election. The committee will receive up to three nominations from each IB representative. The committee will contact all nominees with three or more nominations to ascertain their willingness to stand for the election.

The election will be held electronically by using the Preferential Voting System (PVS) in which an IB member submits a fully ranked list of the candidates.

The IB chair may appoint a vice-chair with the same term, subject to the approval of the IB.

The IB chair will only vote in the case of a tie; the vice-chair will vote as a regular IB representative.

In the event that the IB Chair cannot complete the full two-year term, a new IB Chair will be elected immediately according to the procedures described above, except that the IB will decide when the special election should commence. The newly elected IB Chair will serve the remainder of the term of the replaced IB Chair in addition to the nominal two-year term.

The IB chair can be removed at any time by the IB by a secret ballot of at least 2/3 of those present at a scheduled IB meeting. The quorum for the vote is 2/3 of the entire IB membership. A two-week notice is required for a vote for removal and such a vote will be taken if at least five IB members propose such a vote to the Co-Spokespersons. One of the Co-Spokespersons will conduct the vote. In the event of a removal, the open position will be filled following the procedure described above. The newly elected IB Chair will have a term that includes the remaining term of the removed IB Chair in addition to the nominal two-year term.

§ 3.5 IB Meetings

The IB meets at every collaboration meeting in person. In addition, the IB Chair may call an IB meeting by video/phone. Every IB meeting should have a well-defined agenda and a preliminary agenda will be distributed to the IB at least two weeks ahead of the IB meeting. In particular any agenda items containing proposals that require voting by IB should be presented to the IB along with any supporting materials at the time of distribution of the preliminary agenda.

§ 3.6 IB Committees

The IB or its Chair may establish various committees as needed.

Article 4

Co-Spokespersons

Considering the international nature of the project, it is generally desirable to have one Co-Spokesperson from US institutions and the other from non-US institutions.

§ 4.1 Number of Co-Spokespersons and their Role

There will be two equal Co-Spokespersons of the collaboration. The Co-Spokespersons are the scientific leaders and representatives of the collaboration. The Co-Spokespersons will equally share leadership, authority and responsibilities. The longest serving of the Co-Spokespersons serves as the Executive Committee Chair, and the shortest serving of the Co-Spokespersons serves as the Collaboration General Assembly Chair. The Co-Spokespersons are responsible for preparing agendas for collaboration meetings. The Co-Spokespersons will work very closely with the Executive Committee on all major collaboration matters, seek advice from the Institutional Board, and bring major issues to the Collaboration General Assembly for discussions. The Co-Spokespersons will also work closely with the host lab Director and the LBNF management team. The Co-Spokespersons will bear authority and responsibilities for the day-to-day matters of the experiment.

§ 4.2 Election Procedure and Terms

The Co-Spokespersons will serve two-year terms, staggered so that one new Co-Spokesperson is elected each year. The term of a Co-Spokesperson is renewable, but it is only renewable once. The Co-Spokesperson election process should commence in January every year. The IB Chair will initiate the election process by establishing a Co-Spokesperson Search Committee (CSSC). The composition of the search committee will be proposed by the IB chair and will be approved by the IB. The CSSC members may not stand for the election. The committee will choose its own chair. CSSC will then receive nominations from all eligible voters (up to three nominations per nominator). The committee will contact all nominees with three or more nominations to produce an initial list of candidates who are willing to stand for the election. The committee will then interview the candidates and produce a short list (nominally comprises three candidates) which will be presented to the collaboration for a general election. In this process, the committee will seek input from the host lab Director.

The election will be held electronically by using the Preferential Voting System (PVS) in which a voter submits a fully ranked list of the candidates. All voting collaborators (PhDs or equivalent, engineers and graduate students) who have been the members of the DUNE collaboration for at least one year prior to the election opening date will be eligible to vote. Further requirements for voter eligibility may be imposed by the IB.

In the event that one of the Co-Spokespersons cannot complete the full two-year term, a new Co-Spokesperson will be elected using the procedure described above, except that the IB Chair will decide when the special election should commence. The newly elected Co-Spokesperson will serve the remainder of the term of the replaced Co-Spokesperson in addition to the nominal two-year term.

§ 4.3 Removal of a Co-Spokesperson

Any of the Co-Spokespersons can be removed at any time by the IB by a secret ballot of at least 2/3 of those present at a scheduled Institutional Board meeting. The quorum for the vote is 2/3 of the entire IB membership. A two-week notice is required for a vote for removal and such a vote will be taken if at least five IB members propose such a vote to the Chair. In the event of a

removal, the open position will be filled following the procedure described above, except that the IB Chair will decide when the special election should commence. The newly elected Co-Spokesperson will have a term that includes the remaining term of the removed Co-Spokesperson in addition to the nominal two-year term.

Article 5 *Deputy Spokesperson*

§ 5.1 Selection of Deputy Spokesperson

The Deputy Spokesperson position in the DUNE collaboration is an optional position. If the elected Co-Spokespersons see a need for such a position, they can nominate a person to fill the position with specified roles that are agreed between the Co-spokespersons and the nominee. After a brief presentation of the nominee to the IB by the Co-spokespersons, the IB will confirm or reject the nomination with a secret vote. The confirmation will require a simple majority vote of the IB members voting. The term of the Deputy Spokesperson is one year and renewable.

§ 5.2 Removal of the Deputy Spokesperson

The Deputy Spokesperson can be removed at any time by the IB by a secret ballot of at least 2/3 of those present at a scheduled Institutional Board meeting. A two-week notice is required for a vote for removal and such a vote will be taken if at least five IB members propose such a vote to the Chair. In the event of a removal, the open position will be filled following the procedure described above. The term of the newly appointed Deputy Spokesperson will be the remaining term of the removed Deputy Spokesperson.

Article 6 *Executive Committee (EC)*

§ 6.1 Role of the Executive Committee

The Executive Committee is responsible for setting scientific and technical objectives and priorities of the DUNE collaboration taking account of the financial aspects as well as other resources. The EC establishes procedures for making technical choices, and will oversee progress and developments in various projects. The EC will also advise the Co-Spokespersons on all major collaboration matters.

§ 6.2 Membership of the Executive Committee

The EC will consist of four at-large elected members, two appointed members by the Co-Spokespersons and the following five ex-officio members: the Co-Spokespersons, the Technical Coordinator, the Resource Coordinator and the IB Chair. If the Deputy Spokesperson is appointed by the Co-Spokespersons with an IB confirmation, s/he will be additional ex-officio member of the EC. The longest serving of the Co-Spokespersons serves as the EC Chair.

§ 6.3 Election, Appointment and Terms

There will be two at-large members elected each year in April by the IB. The election process will start with nominations by the IB, each nominating up to two names. The nominees with three or more nominations can stand for the election. The election will be held using a simple secret voting system with each IB voting for two names. The top two vote getters from a single round of vote will be elected. This procedure does not include a vote from the IB Chair unless such a vote

is necessary to break a tie. Immediately after the at-large member election, the Co-Spokespersons will start the process of appointing two EC members by nominating two names to the IB. After a brief presentation of the nominees to the IB by the Co-Spokespersons, the IB will confirm or reject the nomination with a secret vote. The terms of the elected members are two years and appointed members are one year.

Article 7
Collaboration General Assembly (CGA)

The DUNE Collaboration General Assembly is a forum of all DUNE collaboration members. All major decisions by the EC and IB as well as collaboration-wide issues should be reported and discussed at the CGA. This provides a forum where individual collaborators can express their opinions on particular issues. It also ensures that the major decisions of the collaboration are made with input from general collaborators and that the collaborators are properly informed on major issues. In general, the CGA will reach consensus on any major issues and will not conduct a formal vote. The shortest serving of the Co-Spokespersons serves as the CGA Chair.

Article 8
Young DUNE

The young members of the collaboration constitute “Young DUNE”. These are generally students as well as post-docs in an early stage of their career (1st postdoc). The exact membership of the Young DUNE group can be defined by the group itself and the group will elect its own Chair based on the rules it establishes. It has the right to send an observer (non-voting) to all IB meetings and to send representatives (one each) to the Publication Board and Speakers Board when such boards are established. The group will organize its own activities and will have regular meetings with the Co-Spokespersons and/or the IB Chair.

Article 9
Technical Coordinator and Resource Coordinator

The Technical Coordinator and Resource Coordinator serve as the lead technical and financial managers in the context of the international collaboration. They are appointed by the Co-Spokespersons in consultation with the Fermilab Director and have reporting responsibilities to both. The responsibilities of the Technical Coordinator and Resource Coordinator are listed in the DUNE Management Plan. (See Attachment A.2.)

Article 10
Other Management Structures

There are a number of aspects of DUNE which require an explicit management structure, but a particular structure varies with time. The Co-Spokespersons maintain an organizational chart describing the current management structure; it shall be posted on the DUNE official web pages. The responsibility for the creation and modification of these management structures as well as the appointment of the leadership in such areas, other than what is specified in this document, lies with the Co-Spokespersons. The Co-Spokespersons shall, however, solicit advice on the existence and leadership of such structures from a broad base including the DUNE EC and the IB. The Co-Spokespersons will interact actively in the management of all aspects of the experiment and will

ensure adequate discussions at all levels concerning major directions and decisions. See the DUNE Management Plan (Attachment A.2).

Article 11
Dissenting Opinions and Procedure to Appeal

Any collaborators who object to the decisions made by the various DUNE leaders can submit their objections to the Co-Spokespersons and the EC. If the Co-Spokespersons and the EC cannot resolve the situation, then ultimately the issue shall be brought in front of the IB, which shall make the final decision by consensus preferably or by vote if necessary.

Article 12
Attachments

- A.1 LBNF/DUNE Project Management Plan, DUNE-DocDB-117
- A.2 DUNE Management Plan, DUNE-DocDB-2145
- A.3 DUNE Speaker's Committee Rules, DUNE-DocDB-57
- A.4 DUNE Publication and authorship procedures, DUNE-DocDB-1115

Records of drafts and amendments

April 2015: Draft prepared by the GDC writing committee (Brajesh Choudhary, Bonnie Fleming, Chang Kee Jung (Chair), Yannis Karyotakis, Joe Lykken (ex-officio) and Alfons Weber)

10 April, 2015: Version 1.0 submitted to the DUNE IB for its review

18 April, 2015: Version 1.1 submitted to the DUNE IB after incorporating the IB approved revisions and additional comments received.

18 April, 2015: Version 1.1 as submitted was approved by the DUNE IB at the face-to-face IB meeting at Fermilab

4 September 2015: Version 2 was approved with amendments adding a vice-chair to the IB (section 3.3) and allowing admission of new members at an IB phone meeting (section 2.2) at the face-to-face IB meeting at Fermilab

14 September 2016: Version 3 was approved which changed the number and terms of the Executive Committee.

30 January 2018: Version 4 was approved with a series of changes suggested by a review committee consisting of Dominique Duchesneau, Carlos Escobar, Lisa Whitehead Koerner (Chair), Christopher Mauger, Michel Sorel, and Jason Stock.

30 January 2018: Version 5 was approved with a series of changes suggested by a review committee consisting of Dominique Duchesneau, Carlos Escobar, Lisa Whitehead Koerner (Chair), Christopher Mauger, Michel Sorel, and Jason Stock.