

LZ Governance Document

1. Introduction

The primary goal of the LUX-ZEPLIN (LZ) experiment is to reach new levels of sensitivity in the search for Weakly Interactive Massive Particles (WIMPs) and, if possible, to present solid evidence for their existence. The founding members of the LZ Collaboration are the members of the LUX and ZEPLIN Collaborations.

This document constitutes the governance rules of the LZ Collaboration, including the methods for determining the overall scientific strategy of the Collaboration. The LZ project management structure, created to manage the technical strategy of LZ, will adhere to U.S. funding-agency requirements and will be described in separate documents.

When reference is made in this document to “Institutional Groups” this means the University/Laboratory groups that make up the Collaboration. The PIs from each Institutional Group are members of the Institutional Board (IB). The IB selects the members of the Executive Board (EB) that meets regularly with Project Leadership. “Working Group” refers to a team of people that have formed around specific physics or detector performance goals. References in this document to 2/3rd majority votes should be interpreted to mean a requirement for 2/3rd or more of the *eligible* voters to endorse the motion.

2. Organization

In this Section, the governance structure of the Collaboration is outlined. The responsibilities of the IB, the EB, the Spokesperson, and Project Leadership are specified.

2.1. Institutional Board (IB)

The IB will be composed of senior members of each Institutional Group, typically ladder faculty at universities and staff scientists at the national laboratories. Each Institutional Group will have one vote. The Spokesperson, the Project Manager, the Project Scientist, and the Chief Engineer will be *ex officio* members of the IB. Other collaborators may be nominated for consideration by a 2/3rd majority vote.

The IB will elect a Chair, whose responsibilities will include calling meetings, assembling the agenda, and managing committee procedures and membership. This position will have a one-year term limit to encourage rotation among members interested in serving.

IB responsibilities include:

- Guiding the scientific strategy of the Collaboration.
- Electing the membership of the EB.
- Approving the Project Leadership.
- Establishing publication and conference committee(s) and deciding on issues of papers, authorship, and talks.
- Establishing working groups and appointing working group coordinators.

- Managing revisions of the governance document and deciding on issues of membership and voting rights within the Collaboration.
- Monitoring the flow of information within the Collaboration and between the Collaboration and the outside world.

Decisions will be passed if they are supported by a 2/3rd majority vote of the IB.

2.2. Executive Board (EB)

The EB, which reports to the IB, facilitates efficient and timely communication between Project Leadership and the IB. The responsibilities of the EB include:

- Guide the technical strategy of the Collaboration and the Project.
- Advise the Spokesperson(s) and Project Leadership on budgetary and financial matters.
- Respond to project-related issues raised by the Collaboration and by Project Leadership.
- Monitor the progress of the Project to ensure that the Project addresses the science goals defined by the Collaboration.

The size of the EB is determined by the Chair of IB but shall not exceed 9 members. The EB will include at least one member who represents the non-US LZ Institutions. The spokesperson of LZ, one of the two co-spokespersons of LUX, and the LZ Project Leadership are non-voting ex-officio members of the EB. The spokesperson of LZ will chair the EB and can cast a tie-breaking vote, if required.

The EB members are members of the IB and are elected by the IB to represent the views of the Collaboration. EB members serve one two-year term, except for half of the EB members elected in the first election. In order to provide continuity, half of the EB members elected during the first election will be appointed for a one-year-renewable term and the other half will be appointed for one two-year term. IB members can serve non-consecutive terms on the EB. No more than one member from any LZ Institution can serve as an elected member on the EB at any given time.

The EB meets on a regular basis and minutes of these meetings and voting records are available to the IB. Decisions made by the EB are communicated quickly to the IB and can be discussed at IB meetings if any member of the IB requests this. Any member of the EB can request consultations with the IB on issues discussed by the EB. Decisions made by the EB can be overridden by the IB with a majority vote of the *eligible* voters of the IB.

2.3. Spokesperson

The Collaboration is led by one one-term Spokesperson, who has primarily an external role and is the primary interface between the Collaboration and the outside world. Together with the Project Manager and agency-specific PIs, the Spokesperson will interact with the funding agencies to represent the collaboration's progress and plans. The Spokesperson must represent the consensus of the IB. In order to ensure that the Spokesperson can focus on his/her leadership role, he/she cannot serve as Spokesperson of another Collaboration at the same time.

The Spokesperson is elected to a two-year term by the voting members of the Collaboration (see Section 3.2). In order to provide an orderly transition, elections for the new Spokesperson shall be held three months before the end of the term of the current Spokesperson

Decisions made by the Spokesperson can be overturned by a 2/3rd vote of the IB. A reelection of a Spokesperson can be called by a 2/3rd no-confidence vote in the IB. Notice of

such a vote must be made at least one month in advance.

2.4. Project Leadership

The LZ Project Leadership team shall be proposed by the Spokesperson and approved by the IB. The Project Leadership will include a Project Manager who has final authority for Project organizational, technical and financial matters. The concurrence of the head of the LBNL Physics Division is required in the selection of the Project Leadership team. The Project Leadership team will consult broadly with the Collaboration in the development of the Project organization. The Project Leadership team may include members in addition to the Project Manager as required to successfully carry out the Project.

The Project Leadership shall be responsible for defining and maintaining the technical scope, cost, and schedule of the LZ project. Once the project has an established baseline, changes to this baseline shall be managed as described in the LZ Project Management Plan. Key technical issues having substantial impact on the scope, cost, or schedule of the LZ Construction Project will be presented and discussed with the EB so that the EB may provide input and recommendations on these issues to the Project Leadership.

2.5. Working Group Coordinators

In order to focus on scientific or other performance issues, Working Groups will be used. Membership of any Working Group is open to any member of the Collaboration. The Working Group Coordinators are appointed by the Spokesperson, in close consultation with the IB, and must ensure that the team of personnel assigned to a given Working Group is sufficient to meet the goals of that Working Group.

2.6. Institutional Responsibilities

The responsibilities of individual Institutions will be articulated in MOUs. Any changes to these responsibilities will be handled by the Project Manager. The Project Manager may choose to bring institutional issues to the IB.

3. Collaboration business

3.1. Collaboration Membership

The addition of new Institutional Groups to the Collaboration must be approved by a 2/3rd majority of the IB. Any proposal for new membership requires at least one month notice to the Collaboration via the IB, and must ensure ample opportunity for members of the Collaboration to consult with the new group.

A new senior member (Faculty or Senior Scientist) can be added to an existing Institutional Group based on a 2/3rd majority vote of the IB. The addition of other new members, such as engineers, postdocs, graduate and, undergraduate students, to the Collaboration is managed by the Institutional Group leaders. These appointments will be included in the Collaboration Membership List maintained on the WEB. Institutional Group leaders should inform the IB of

departures of individuals from the Collaboration.

Members of the Collaboration are expected to make significant contributions to the experiment. The continuing status of individuals should be reviewed by their Institutional Group leader(s). The Collaboration status of individuals can be reviewed/voted on at the IB, if it is deemed necessary by the Chair of the IB.

Institutional groups are expected to meet the obligations outlined in their MOUs to maintain their good standing in the Collaboration.

Regarding potential conflicts of interest, members of the Collaboration will not join another dark matter experiment without 2/3rd approval of the IB. This does not apply to R&D proposals.

3.2. Collaboration Voting

Eligibility for Collaboration votes will be based on membership of the Collaboration, holding a PhD (or equivalent), and being an active participant in the experiment. The latter basis will require that the individual contributed at least 50% of his/her research time to the experiment in the previous six months, with the expectation that this level of involvement will continue. The IB Chair will maintain a list of eligible voters. Any contentious memberships will be discussed in the IB.

3.3. Meetings

Regular phone/video meetings should be conducted as appropriate at which the Subsystem and Working Groups can plan, coordinate and review the work they are conducting. Their respective manager or coordinator will chair meetings.

The Collaboration should hold periodic Collaboration meetings at which all members of the Collaboration should try to be present. The Spokesperson will chair and set the agenda for these Collaboration meetings in consultation with the IB. These meetings will provide an opportunity for presentations to be made by members of the Subsystem and Working Groups, as well as discuss the progress of the project.

3.4. Publications and Conferences

The IB will establish publication and Conference committee(s). Changes to the publication and conference policies must be approved by a 2/3rd majority of the IB. These policies will be easily accessible to all members of the Collaboration.