

The Management Plan of the GLUEX Collaboration

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The GLUEX Collaboration, or simply “the Collaboration” in the context of this document, is a group of scientists who are interested in pursuing a diverse program of physics using photon beams in the HALL D facility at Jefferson Lab. This Management Plan (MP) outlines the governance and operation of the Collaboration. While some subsets of the collaboration may pursue different physics topics, the collaborators as a whole are united in their desire to work together to build and maintain a detector, beamline, and physics analysis infrastructure that permits the efficient publication of high-quality physics results.

1 Principles of the Management Plan

The task of the GLUEX Collaboration is to secure scientific approval and funding for the GLUEX experiment at the HALL D facility of the Thomas Jefferson National Accelerator Facility (JLab) and to subsequently design, construct, and commission the beam-line and detectors and to complete the physics program leading to the publication of final results.

The governance of the Collaboration is laid down in the MP in such a way as to assure the timely and successful completion of the tasks above. It emphasizes teamwork and peer-review as essential to the successful execution of this plan. The framework is based on the formation of teams for each task with the autonomy and delegated authority needed for them to carry out their tasks within the integrated structure of the Collaboration. Mechanisms of oversight and review of each team’s work are implemented to assure that the goals of the Collaboration are achieved in a timely, effective and coherent manner. An effective and unhindered liaison with JLab staff and management is paramount to the success of the project.

A collaboration is as good as the members that form it. The philosophy of the MP is to maximize the considerable talent and expertise available in its membership, while, at the same time, preserving a well defined order in decision making. Three principles guide this approach:

- First, the Collaboration needs a strong and effective leadership. Such leadership ultimately resides with individuals who are identified with the physics and technical goals of the experiment and who have the confidence of their peers within the collaboration and the community beyond. The MP endorses a multi-tiered structure designed to encourage and recognize such leadership at all levels within the Collaboration.
- Second, the Collaboration needs a clear and transparent decision making process, one that is open to every member of the Collaboration who wishes to participate. This is accomplished by the principle of representative democracy, where the Collaboration and all the teams and groups within it elect their own representatives to the next higher level of decision making. In parallel, the MP makes provisions which safeguard the effectiveness of the structure by outlining the process of conflict resolution at the various levels where such conflict may arise.
- Third, the MP proposes a structure that is both simple and flexible and able to adapt and change as experience and circumstances dictate.

As the Collaboration progresses through the various stages of its program, the MP is an adaptable and flexible instrument of governance and can change to best serve the membership based on experience and environment. The basic principles enumerated above provide a reliable basis upon which the MP and its future developments will be founded.

2 The GLUEX Collaboration membership

The GLUEX Collaboration membership consists of institutional groups that have submitted a Letter of Intent (LoI) specifying the expected contributions within the scientific and/or technical objectives of the GLUEX Collaboration. Such contributions may be defined as any component of hardware, software, or any aspect related to the scientific basis of the experiment, and which the collaboration deems important to the pursuit of its objectives.

Membership for researchers within either an institutional or a task oriented group will also carry individual membership status. The list of individual researchers within the group brought forward for membership is the responsibility of the group leader. The list, drawn in good faith by the group leader, is a commitment by the individuals named to fulfill the obligations outlined in the LoI and to be active members of the collaboration in all its aspects.

Membership entails specific contributions to the GLUEX experiment in all its aspects. As such, a failure by any individual or group to meet the respective LoI commitments constitutes grounds for removal of the individuals or groups from the GLUEX Collaboration membership list. The rules governing such matters will be defined in the appropriate sections of the MP and by the introduction of by-laws to be defined after the adoption of this MP.

Finally, all members in good standing will enjoy equal rights, opportunities for advancement, voting and decision making rights. The Collaboration membership is the source of all decision making by elected representation and general voting procedures on the GLUEX governance, as stated in the following sections. Even though the Collaboration is a layered structure for organizational and functional efficiency, Collaboration members may bring concerns, ideas, and suggestions to any group, team, or representative within the collaboration. Thus, accessibility is an implied doctrine throughout this MP.

3 The GLUEX governance structure

The governance structure of the GLUEX Collaboration consists of five bodies. These are

- the GLUEX Collaboration Membership,
- the Working Groups (WG),
- the Technical Review Committee (TRC),
- the Executive Group (EG), and
- the Collaboration Board (CB).

3.1 The GLUEX Collaboration membership structure

Based on the general principles of the HALL D membership in Section 2, specific issues of membership structure are listed below which help define the membership, introduce grandfather clauses, and outline the mechanisms to be followed for introduction of new members. Purpose-specific by-laws may be added after the adoption of this MP to enhance and refine the process.

1. When this MP is voted into existence by the existing membership, it will create the GLUEX Collaboration by the current membership, as listed elsewhere in this document. This includes the posts of Spokesperson, Deputy Spokesperson, and HALL D Leader, as they are listed in this document. This article constitutes the formal grandfather clause of the Collaboration.
2. It is expected that all current members who wish to remain as Collaboration members will provide an LoI or equivalent document outlining undertaken commitments, for each individual or for each group of individuals, as stated above in Section 2.

3. New applicants for membership, after the adoption of this MP, will be admitted into the GLUEX Collaboration upon submission of an Letter-of-Intent (LoI) to the CB and Spokesperson, and voted upon by the Collaboration membership upon recommendation by the CB.

3.2 The Working Groups

The working group WG concept encompasses groups of Collaboration members working together on specific components of the experiment based on expertise, interest, and individual obligations. The WG concept foresees an open architecture where members can contribute to more than one WG and where WG's may be added or dissolved as the need arises. Furthermore, members within a general WG may create sub-groups depending on need and work load. Each WG will select a representative to the TRC. The method of selection is left up to individual working groups.

3.3 The Technical Review Committee

3.3.1 TRC mandate

Although interaction between working groups is not only desirable but necessary, practical matters point to the necessity for a committee of representatives of the various WG's to form a review panel with the EG members and to oversee the total progress and integration, as it unfolds from the WG's. This is a very important committee on technical terms alone, since integration problems and solutions, element compatibility and delivery schedules of the total system will be examined and reviewed and recommendations will be made.

Other tasks may include the approval of prototypes before actual construction of the final elements begins, and addressing budget issues affecting construction and deliveries. Generally, the TRC is the body that advises the EG on any and all technical and scientific issues concerning the GLUEX experiment. In particular, the TRC shall identify issues that might prevent the project from meeting its milestones and suggest corrective action. It shall also review resource allocations and recommend priorities to the collaboration management based on technical risks and opportunities.

3.3.2 TRC structure

The TRC consists of the representatives of each working group (chosen by their respective WG members) and the three members of the EG. The TRC will be chaired by the Spokesperson, who can also invite any other member of the Collaboration to attend, based on a specific issue of need and expertise. In order to preserve flexibility and effectiveness, the Spokesperson may invite experts outside the Collaboration to attend specific meetings.

All reasonable freedom of action should be given the TRC to accomplish the Collaboration's objectives. The Spokesperson has the authority to replace the representative of a WG, for cause, with another member of the same WG selected by its members. Such action by the Spokesperson must be preceded by consultation with the CB Chair and the membership of the TRC in an effort to resolve the issue prior to removal.

3.4 The Executive Group

The EG consists of three members, the Spokesperson, the Deputy Spokesperson, and the HALL D Leader.

3.4.1 The Spokesperson

The experiment Spokesperson is the Collaboration's central scientific figure to the world. The Spokesperson is expected to publicly represent and be familiar, but not necessarily an expert, with all physics and technical aspects of the experiment. Furthermore, and just as importantly, the Spokesperson must provide leadership, encouragement, and continuity without undue interference, together with the ability to take charge of and motivate individuals.

The Spokesperson is responsible for all scientific and technical affairs of the GLUEX Collaboration. The Spokesperson is the primary contact and ambassador between the GLUEX Collaboration and JLab management and is expected to consult often and effectively with the CB Chair, the HALL D Leader, and the TRC. Finally, the Spokesperson will chair the TRC and will nominate the Deputy Spokesperson to the CB for approval.

The position of Spokesperson is a term position. The initial stages of the GLUEX Collaboration's objectives, such as the funding approval and the construction phases, require conditions of stability and continuity which are consistent with a longer term of tenure than later phases of data taking and analysis. The term is fixed at four years from the date of adoption of this MP.

The term for Spokesperson is renewable without any restriction on number of consecutive terms served. Upon the expiration of the stated term, the CB will call for nominations among the collaboration. The CB will act as an initial search committee to select no more than two candidates, based on technical, scientific, personality traits and, most importantly, leadership qualities, from among the pool of nominees. The CB-endorsed nominee(s) will be presented to the the Collaboration membership for final vote.

3.4.2 The Deputy Spokesperson

The Deputy Spokesperson is the Spokesperson's load-sharing, stand-in during absence and close advisor. The Deputy Spokesperson will generally carry duties and responsibilities assigned by the Spokesperson. In case the Spokesperson is either removed from office or resigns, the Deputy Spokesperson will be assigned as Spokesperson (acting) until the collaboration elects a new Spokesperson.

The Deputy Spokesperson will be selected by the Spokesperson from among the Collaboration membership and presented to the CB for confirmation only. In the case of the CB, there should be important and overriding concerns in order to reject the selection by the Spokesperson. A rejection will require a two-thirds vote by the CB members.

The normal term for the Deputy Spokesperson coincides with that of the Spokesperson. There is no limit on the number of consecutive terms the Deputy Spokesperson serves.

3.4.3 The HALL D Leader

The HALL D Leader is a JLab staff physicist appointed by JLab management with input from the GlueX collaboration. If the HALL D Leader is not already a Collaboration member, the Collaboration will invite him/her to join upon acceptance of the position.

The duties of the HALL D Leader are as diverse as they are important. The person will be the official representative of JLab management within the collaboration. The coordination of all elements necessary to deliver a high quality electron beam to the tagging facility, are primarily the responsibility of the HALL D Leader. All safety related administrative and engineering procedures and controls are also within the HALL D Leader's direct responsibility and authority. In addition, the Hall D leader will oversee the detector design, construction and installation.

The HALL D Leader is an important member of the TRC and is expected to interact and consult with members of the relevant Working Groups.

3.5 The Collaboration Board

3.5.1 The structure of the CB

The elected representative body of the collaboration is the CB. Its membership will consist of six voting members called CB Officers. The CB Officers will be elected directly by the Collaboration membership and they will choose their own chair. The Spokesperson, Deputy-Spokesperson, and the HALL D Leader, who cannot be elected to the CB, can attend CB meetings upon invitation by the CB Chair. No more than one voting member per institution or institutional group may serve on the CB. The CB membership tenure will be two years, with no more than two terms served consecutively for any member.

3.5.2 The mandate of the CB

The role of the CB is to address all issues related to the overall framework of the collaboration. It will decide on new membership applications in committee with the Spokesperson, as well as make recommendations to the collaborations for any changes to the existing membership. It will ratify the proposed by-laws for the collaboration and vote on proposed amendments. On major issues which affect the structure of the collaboration and the MP, both the CB and the general membership vote will be required. The exact mechanism will be defined in the by-laws, to be defined after the adoption of this MP.

Another important role of the CB is the management of issues related to graduate students. The very nature of the GLUEX experiment, which is also a Collaboration as well as a facility, presents challenges and opportunities for the allocation of these material for graduate students among the university based members of the Collaboration. A set of by-laws will be needed to govern such matters and to ensure fairness and objectivity to students and faculty.

The CB represents the interests of the membership in all aspects relating to the objectives of the GLUEX Collaboration. It is expected that the CB Chair will play an active role in the governance of the collaboration and will bring issues of interest and concern of the membership to the attention of the EG and JLab management. The CB may recommend to the membership the removal of either the Spokesperson or Deputy Spokesperson by a two-third majority in the CB vote. The CB will meet regularly as conditions and needs arise and not less than three times within a calendar year.

The CB, together with the EG, is entrusted with the well being of the Collaboration. All avenues of communication and substantive exchange of views will be pursued among these two committees and that electronic polling and conference calls will be employed to enhance the time response and frequency of contact between these two groups, over and above formal CB meetings a few times a year.

3.5.3 The Chair of the Collaboration Board

The Chair, elected by the board from its six members, will be responsible for calling CB meetings. However, any CB Officer can request to the Chair that a meeting be held. The Chair will consult with the other Officers and decide on the merit of such a request. The Chair will announce general Collaboration meetings in consultation with the Spokesperson.

The CB Chair, like the Spokesperson, is a position of high responsibility and sensitivity because the role is primarily that of human interaction rather than technical aspects. It is expected that on the issue of voting the Chair will not vote on routine matters where simple or absolute majority is required, thus eliminating the possibility of split decisions in the six member committee. If the Chair wants to vote on such matters, the CB members present must elect an alternate Chair from among themselves who agrees to chair the meeting. On issues that require two-thirds majority, all members of the CB are eligible to cast a vote. Finally, the Chair is responsible for reporting on the activities of the CB to the Collaboration.

3.5.4 General duties of CB Officers

The assigned duties of the other five CB Officers, as delegated by the Chair in consultation with the Officers of the Board, reflect the mandate of the CB. Thus, CB Officers will be typically assigned one or more duties from the following list, which does not exhaust all responsibilities of the CB.

- dealing with membership issues,
- dealing with nominations issues,
- dealing with publication issues,
- coordinating the speaker bureau,
- keeping accurate records and minutes as the CB Secretary, and
- coordinating graduate student projects and theses.

If the need arises, either due to special circumstances or due to load factor, one or more Officers may request from the Chair the formation of subcommittees to assist in specific tasks. Such subcommittees are advisory to the CB and are to be recruited among Collaboration members. If necessary, non-Collaboration members may be invited to participate due to expertise and specific skills. Such subcommittees are of limited time duration and scope.

4 Changes to the MP

The structure of the MP can be modified by the two-thirds majority vote rule in both the CB and the GLUEX general memberships.

5 Summary

Due to the unique character of GlueX as an experiment, but with a clear facility component, existing models of collaboration management at JLab could not be easily adopted and a new structure was developed. This management plan creates the minimum structure necessary to accomplish the ultimate objectives of the collaboration. It preserves flexibility, while, at the same time, creates a structure which is well-define and maximizes the individual talent and contributions of its membership. The detailed role of JLab management and structure for Hall D remains to be defined outside this MP in accompanying by-laws to ease integration of new elements into this basic structure.