# SBN Committee Rules and Policies [v2]

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## 1 Introduction

This document contains rules of the SBN Publications, Results Approval, and Speakers Committees. These committees report to the SBN IB; in the event that there are disagreements that can not be satisfactorily resolved by the committees, the SBN IB will make the final decision, in consultation with collaboration leadership. Section 2 contains common definitions of types of results and the following sections contain the charge and rules for each committee. Publications Committee rules are in Section 3, Results Approval Committee rules are in Section 4, and Speakers Committee Rules are in Section 5. The document also contains, in Section 6, a policy for maintaining and implementing a coherent strategy for data management and computing.

## 2 Types of Result/Publication

There are four types of result or publication that the committees will consider. Any SBN collaborator wishing to make SBN results public must first submit their result to the Results Approval Committee (RAC). All material in public presentations and papers must have been approved by the RAC. Any SBN collaborator wishing to author a paper addressing SBN-related topics must submit their draft to the Publications Committee before making it public, even if the paper is written with outside collaborators and/or is intended to be an external paper. When a result or paper is brought to the committees, while the analyzers or authors may have an idea of which type of result it should be, this designation is ultimately the responsibility of the committees.

The types of result or paper are as follows:

- SBN result/paper: Any joint physics or technical result or publication from SBN. Results and publications in this category make use of data from more than one SBN collaboration or make statements about sensitivity or physics results of more than one SBN collaboration. Papers in this category will carry the full author list of both SBN collaborations, as well as any exceptional authors. The list of authors will be submitted to the committee by each collaboration; the author list will be the union of the collaboration author lists and any exceptional authors. Exceptional authors may be added by the collaboration or by the committee as appropriate. The author list will be defined on the date that the paper is sent out for collaboration review such that the review process will include approval of the author list.

- SBN proceedings: This category includes all conference proceedings for talks assigned by the SBN Speakers Committee as well as conference proceedings with content that uses data from more than one of the collaborations or makes statements about the physics sensitivity of more than one SBN collaboration. Publications in this category will have a single author, the presenter, with the additional designation, "for the SBN Program."

- Single-collaboration result/paper: Any result or paper attributed primarily to a single collaboration. This category includes single-collaboration results, proceedings, technical, and physics papers. If the publication uses data from only one of the collaborations and makes statements about sensitivity of only one of the collaborations, the paper will be a single-collaboration paper. For papers in this category,

the default author list will be that of the individual collaboration. The SBN Publications Committee - see Section 3 – will coordinate an opt-in process to provide a list of additional SBN collaborators who have contributed to software/infrastructure used in the paper. Details of this opt-in process are described in Appendix A. Authorship of single-collaboration proceedings will follow the rules of the individual collaboration.

- External paper: Any paper including SBN authors that does not include the full collaboration author list(s) and addresses topics related to SBN sensitivity or physics. Publications in this category are performed by a small group of authors that includes SBN collaboration members and describe technical, phenomenological, or other research related to SBN, but do not make use of unpublished data, software tools, resources, or infrastructure from SBN collaborations. Text and figures in these papers should use language to distance the results from the SBN program (eg: "SBN-like" rather than SBN, "near detector" rather than SBND, etc) and should not make claims about SBN sensitivity or physics results that might be reasonably interpreted as coming from the SBN collaborations. For these papers, the author list will include only direct contributors to the paper. The SBN Publications Committee - see Section 3 – will oversee a collaboration review of the author list.

# 3 Publications Committee

## 3.1 Charge

The SBN Publication Committee ("the committee") is charged with coordinating aspects of the approval process for all publications by SBN experiments, including postings on arXiv, conference proceedings, and journal articles. The details of the committee's role vary depending on paper type and are described in the following sections. The committee will also perform publication planning, reporting, and record-keeping functions as described in Section 3.5. The committee is charged with ensuring timely and high-quality publications that appropriately and effectively represent the scientific consensus and contributions of the SBN collaborations.

## 3.2 Membership of Committee

The committee will have three representatives from each collaboration, named by each collaboration. If a collaboration has a standing Publications Committee, the chair of that committee should be one of the three representatives. If a collaboration does not have a standing Publications Committee, the collaboration will designate one of its three members to serve the role of official contact with that collaboration's internal publication process. At least one of the representatives from each collaboration should be an early career member. The collaborations are encouraged to consider diversity in naming their committee members such that the committee can effectively represent the range of perspectives in SBN.

## 3.3 Author List

The committee will play a different role in determination and collaboration approval of the author list depending on the SBN publication type, as described in Section 2.

## 3.4 Publication Review Process

The review and submission process for publications is described in the following sections; the process should proceed in the order the steps appear here. The analysis described in any publication will have already been approved by the SBN Results Approval Committee as described in Section 4. The paper and supporting technical note will be posted in SBN DocDB. The review process will be initiated by the paper authors/editors by contacting the committee via the official listserv: sbnpubs@fnal.gov. All papers from either collaboration must be sent to the committee; the details of the approval process will be different depending on the publication type, as described in the following sections. In cases where a collaboration requests confidentiality, the committee will keep the topic and contents of single-collaboration papers confidential until the opt-in

process begins. Paper authors are encouraged to contact the committee before official submission of their paper to the committee, particularly in cases where there may be ambiguity in the paper classification.

#### 3.4.1 Paper Classification

The committee will determine which of the publication types described in Section 2 is appropriate for the paper. The paper classification process will be concluded within one week of the authors notifying the committee of the paper. If the paper authors/editors do not agree with the classification determined by the committee, they will have an opportunity to meet with the committee for further discussion; in this case the process will extend beyond the nominal one week. In the case that an agreement can not be reached, the SBN IB will be asked to make the final decision.

#### 3.4.2 Paper Team Assignment

This step applies only to SBN papers and proceedings. The committee will name a Paper Team within one week of paper classification. The paper team will be responsible for reviewing the paper, conducting the collaboration review, and all details of the submission process. For SBN proceedings, the Paper Team will consist of at least the author and one member of the Publications Committee. For conferences with large numbers of proceedings, the committee may choose to delegate this responsibility to a member of one of the collaborations. For SBN papers, the Paper Team will consist of at least one person from the list of primary authors/editors, at least one person from the analysis review committee that approved the results, and at least one person from the committee. The committee may choose to add additional readers from the collaborations to any Paper Team as needed.

#### 3.4.3 Content Review

The content review process differs with paper type, as follows.

- SBN papers and SBN proceedings: Publications under review by the process described here will contain only material previously approved by the SBN Results Approval Committee, so the primary focus of this review will be to verify that this is the case, assure that the text is clearly and correctly written, and assure that the figures are publication quality. However, if any concerns about the analysis arise during the review, they must also be addressed.

  In the case of journal articles, the Paper Team will propose to the committee the journal to which the paper will be submitted and the paper will be formatted accordingly by the authors. In the case of proceedings, the Paper Team will consult with the SBN Speakers Committee to verify that the content of the draft is consistent with the presentation. The Paper Team will review the paper draft for content, editing, and aesthetics, ensuring that the text clearly and correctly describes the work being presented, that the spelling and grammar are correct, that the figures are formatted according to any existing SBN figure style, and that the work being presented is correct and appropriate for publication. Any issues arising during this review will be resolved by the Paper Team in consultation with other lead authors/analyzers and other members of the Results Approval Committee. This process will be completed within two weeks unless major analysis concerns arise.

- Single-collaboration papers: The individual collaboration will be responsible for content review.

- External paper: The committee may suggest modifications to the paper to conform to the restrictions required to be classified as an external paper, but will not otherwise take responsibility for review or content of the paper.

#### 3.4.4 Collaboration Review

All SBN collaboration members will have an opportunity to review publications and provide feedback, with the process differing according to publication type, as follows.

- SBN papers: The Paper Team will work with the collaborations to obtain a current author list from each collaboration and will distribute to all collaboration members a paper draft with the proposed author list attached. The collaborations will have two weeks to provide feedback on the paper content and verify the author list. The Paper Team will collect collaboration comments, make appropriate changes to the paper and author list, and post written responses to all comments in DocDB.

- SBN proceedings: The draft will be distributed to the collaborations. Collaboration members will be given one week to express any concerns about the content, but they will not be asked for a detailed review.

- Single-collaboration papers: The committee will distribute an abstract and summary of software tools and infrastructure used in the paper to all SBN collaboration members. The committee will coordinate an "opt-in" and author review process, lasting a total of two weeks, to identify SBN collaborators who have contributed to software, algorithms, or analysis tools used in the described analysis and give them an opportunity to reveiw the paper. The details of the opt-in process are described in Appendix A. Only authors of the paper will be asked for a detailed review of content, as described in Appendix A.

- External papers: The draft will be distributed to the collaborations. Collaboration members will be given one week to express concerns about the content or to make the case that they have contributed to the external paper and should be included as an author. The committee will work with the authors to address any such concerns. In the event there is an authorship or content dispute that can not be settled by the Publications Committee, the SBN IB will be asked to make the final decision.

#### 3.4.5 Final Approval

When the paper is ready to submit, the collaboration spokespeople will be notified. Approval from spokespeople of both collaborations is required before the paper is submitted. This should happen within two weeks of notification. In the case of single-collaboration papers, review by the spokespeople of the other collaboration is limited in scope to confirmation that the paper designation and author list are appropriate and that the results presented are consistent with those of the SBN Program.

#### 3.4.6 Corresponding with Journals

For SBN papers and SBN proceedings, the Paper Team will be responsible for posting the approved paper on arXiv and submitting it to the journal. The Paper Team may choose which of its members serves as the point of contact with the journal. The Paper Team will be responsible for responding to any reviewer comments and making any revisions to the paper. Reviewer comments and responses will be posted in DocDB. For external papers, journal submission and correspondence will be handled by the paper authors and for single-collaboration papers, it will be handled by that collaboration. In the case that reviewer comments are substantial and/or require significant, non-cosmetic changes to the paper, the procedures in Sections 3.4.4 and 3.4.5 must be repeated before the responses can be sent to the journal.

### 3.5 Planning, Reporting, and Record Keeping

- Planning: The committee will develop and report to the SBN IB an annual publication plan, describing key results/publications that are anticipated in the coming year. This plan will be developed in consultation with collaborations spokespeople and analysis coordinators and the SBN IB. The committee will solicit quarterly reports from the collaborations on the status of planned publications that are not yet in the hands of the committee.

- Reporting: The committee will provide and maintain a mechanism for any member of SBN to view the current status of all publications reviewed by the committee. Dates for each step of the approval process that has been completed and the remaining steps required for publication will be included. The committee will maintain a publicly accessible archive of all SBN published papers. The committee will provide an annual report of its activities, status of papers under active consideration, and publication strategy for the coming year to the SBN IB.

- Record Keeping: As a service to paper authors and to help ensure appropriate credit for all contributors to the SBN program, the committee will maintain a list of recommended citations including foundational work for the SBN program and relevant technical papers. The committee will preserve a record of the status timeline and the outcome of the process for each paper considered by the committee. The committee will maintain a record of the demographics (gender, affiliation, career stage) of committee membership, of paper teams, and of paper lead authors.

# 4 Results Approval Committee

## 4.1 Charge

The RAC will decide if a given scientific result should be reviewed by the SBND collaboration, the ICARUS collaboration, or by a joint process. In the case of a joint SBND/ICARUS process for reviewing the result, the RAC is responsible for defining the procedure in accordance to the guidance outlined within this document.

## 4.2 Membership of Committee

The committee will be composed of the two co-conveners of the SBN Analysis Group and two additional members, representing ICARUS and SBND respectively, from the analysis leadership within the collaborations. The committee may define ad-hoc sub-committees as needed to assist in review of individual results.

## 4.3 Points of Contact

The committee will report to the SBN IB following all RAC meetings.

## 4.4 Description of Processes

For each scientific result considered by the RAC, an Analysis Synopsis and Review Plan Proposal must be submitted. This brief document, a few pages in length, should outline the goals of the work, describe the data and analysis tools being used or developed, and suggest how the analysis should be reviewed. This proposal should be generated once the outline of an analysis is well-understood and an upcoming review can be foreseen, but well before the analysis is to be made public. The proposal may be submitted by any member(s) of the RAC or by other members of the physics analysis leadership of either collaboration.

The RAC will organize virtual open SBN forums on a regular basis (monthly or quarterly) where the proposals are presented. The virtual forums will be open to all SBN members and will include presentations by analyzers or conveners. SBN members will be encouraged to provide input to the RAC after the open meeting. The RAC will consider cases where a collaboration wants an analysis to be kept confidential and have the virtual meeting open to only one collaboration.

Within two weeks of the open meeting, the RAC will document their recommended classification of the result, taking into account feedback from the open meeting, and in consultation with the SBND and ICARUS spokespersons. This classification will be made following the rules outlined in Section 2. If more details are required to determine the result classification, the RAC will provide a list of questions that must be answered before returning for a second round of review (which, at the RAC's discretion, may or may not require another presentation at the open forum).

SBN results and/or concurrently produced results pertaining to the same (or similar) data with the same (or similar) analysis goals shall undergo a joint review process. In the case of a joint review process, the RAC will select sub-committee members from each experiment to review the result. Although the sub-committee may be formed soon after the RAC decides on a joint process review, the review itself will not start until a complete technical note describing the new result is received and considered correct and complete from the perspective of the relevant analysis group(s) conveners. If the review sub-committee approves the result, then the result may be presented publicly and a paper approval process will be organized by the SBN Publication Committee, as described in Section 3.

The review procedure for all SBN results must adhere to the Principles for Data Sharing, Analyzing, and Publication within the SBN program.

# 5 Speakers Committee

## 5.1 Charge

The SBN Speakers Committee (SBN SC) is charged with ensuring that SBN Program is well represented at major Physics conferences. The procedures to follow in case of joint SBN talks at conferences are described. In particular, the SBN SC is taking care of managing situations in which conferences may be of interest of ICARUS and SBND collaborations jointly. **To a lesser extent also the SCs of other collaborations should be involved in the process of speaker's selection and in the talk organization when needed by circumstances (i.e. in the case in which either ICARUS/SBND or directly one member of the collaborations is invited to give a talk on SBN + other experiments).**

## 5.2 Membership of Committee

The SBN SC is composed by an even number of members of the ICARUS and SBND Speaker's Committees. The participation to the SBN SC of two early career collaborators from both ICARUS and SBND is encouraged. SBN SC is co-chaired by one of the two ICARUS SC chairs and by the SBND SC chair.

## 5.3 Procedures

This section describes all possible stages which are needed to finalize a SBN joint talk and provides procedures to be followed unambiguously.

### 5.3.1 Invitation to a conference

The following cases are considered:

1. invitation to one single collaboration to give a talk on its experiment: it is left to the single collaboration SC the choose either to present the single experiment activities or to move the talk to a general SBN one. In this latter case the SC informs the SBN SC and a possible agreement is found to give a joint SBN talk and to select the speaker;

2. direct invitation to one member of one of the collaborations to give a SBN talk: all collaborators who receive such an invitation are expected to make the SBN SC aware of that. The fact that an invitation was received personally may be a factor in the recommendation of a speaker, but it should not be the sole factor, particularly for a priority conference. Therefore the SBN SC may either confirm the invitation or try to interact with the conference organizers to agree on a more suited candidate chosen between the collaborations;

3. invitation to one single experiment or to the two experiments jointly to give an SBN talk: the relative SC must contact the SBN SC. Then, a consensus should be found for a speaker belonging to the ICARUS or SBND collaborations.

### 5.3.2 Abstract submission

It is left to the ICARUS or SBND collaborations to identify conferences of their own interest and to send abstracts relative to the presentation of the results obtained from the data of a single experiment. This is especially the case in which one collaboration is willing to submit abstracts for parallel talks and poster sessions, or for talks to be given at more technical conferences. Nonetheless, a single SC may consider to involve the SBN SC to coordinate the submission of a joint SBN abstract to a specific conference. The SBN SC shall consider directly seeking talks for major conferences for the SBN Program when deemed necessary.

### 5.3.3 Speaker selection

Once an agreement for a joint SBN talk at a conference is reached, the SBN SC will send a call for nominations to the collaborations. The SBN SC will then adopt several criteria to select the speakers, including but not limited to: fairness, service work for the benefit of the collaborations, previous talk opportunities, quality

of the speaker, match of the speaker's interest to the particular meeting and finally gender and geographic balance. The promotion and job search situation of collaborators can be an additional factor in a decision. The final selection of the speaker is done by the SBN SC.

#### 5.3.4 Talk preparation

The SBN SC is taking care of coordinating the review of the draft slides of a joint SBN talk and of organizing a practice talk where the collaborations are invited to participate. This includes setting appropriate standards for timing of practice talks and for the posting of materials for collaboration review. The practice talk needs to be held at least one week in advance of the presentation or three days before travel to the conference, whichever of these is earliest. The SBN SC will negotiate the time and venue for the talk and announce it to the collaborations. The draft slides should be circulated to the collaborations at least a day prior to the date foreseen for the practice talk. The speaker will post the revised draft of the presented material with a note to SBN SC at least 48 hours before the presentation at the conference.

A joint SBN talk will be characterized by specific features, which are under the SBN SC responsibility:

- a common template will be adopted to host all relevant general and common logos plus space for the speaker's specific institution logos;
- if the speaker will give the talk on behalf of the ICARUS and SBND collaborations, the following formula should hold: "on behalf of SBN Program (ICARUS and SBND Collaborations)";
- the speaker should find the proper balance between the experiments in the preparation of the talk, interacting with the SBN SC;
- joint scientific results should be reviewed and approved by the SBN Result Approval Committee (RAC) as described in Section 4 before being used for a joint SBN presentation.

Other possibilities in which the SBN SC should be involved even in the case the talk is prerogative of a single collaboration are the following:

1. if one collaboration is willing to prepare a talk using results from the other two experiments which have not been published yet, but that have been already presented at public workshops or conferences, then the single SC should let aware the SBN SC of that before using the results;
2. in the case one single collaboration is invited to give a plenary talk, in particular for major conferences, it is left to the chair(s) of the SC's to inform the SBN SC and possibly invite the SC members of the other collaborations to participate to the practice talk;
3. if a talk given by a single collaboration contains already published SBN-related material, the SC's of all collaborations should be invited to the practice talk.

#### 5.3.5 Steps following the talk

The final slides (as presented) should be uploaded to the SBN DocDB for reference. After the conference, the SBN talks should be posted in the public area of the SBN website.

For what concerns the approval of Conference Proceedings articles, the SBN SC will interact with the SBN PubComm only to verify that proceedings are covering material that was shown in the corresponding conference presentation (either talk or poster). Procedures for proceedings approval will be conducted by the Publications Committee as described in Section 3.

# 6 Dataset and Computing Coordination Policy

## 6.1 Introduction

This policy follows the principles set out in the "Statement of Principles for Data Sharing, Analyzing, and Publication within the SBN Program"[2], agreed by the SBN Oversight Board on 8 March 2019. In particular for the SBN Dataset and Computing Coordination:

- principle 2 states that "All data taken at Fermilab by either the near or far detector are to be made available promptly and with equal access to any member of the SBN program"; and,
- principle 3 states that "All software tools developed for the analysis of near or far detector data are fully available to any member of the SBN program"

These principles will require a common coordination of data, computing, and software resources. For example, while data collected from both detectors must be accessible to all SBN members, unmanaged access to data may lead to inefficient use of resources and impede access of data for others. Additionally, implementation of the mechanisms for common coordination will largely need to be established prior to when data is collected by both SBN detectors (the formal beginning of the SBN Physics Program) to ensure that common computing and data storage challenges can be met at that time.

This policy aims to outline the responsibilities of SBN leadership, member collaborations' leadership, both joint and member collaborations' technical groups, and analyzers in maintaining and implementing a coherent strategy for data management and computing. This includes:

- defining responsibilities for sharing of data, computing, and software;
- defining the processes for request, approval, and use of computing resources, and the responsibilities for prioritization of those computing resources;
- defining the responsibilities for predicting the overall need of computing resources, and for incorporating new resources as they are available to the SBN; and,
- integration with and technical implementations of analysis approval processes.

The goal of this document is to define policies that will enable the efficient use of data, computing, and software resources to enable SBN members to conduct analyses.

Because the SBN physics program includes both joint analyses with the near and far detectors, as well as measurements carried out independently within each detector [1], and because any SBN member may pursue any analysis topic that they wish (principle 4 of Ref. [2]), these policies consider all data and computing within the SBN program.

## 6.2 Responsibilities for technical implementation on sharing principles

This section describes the responsibilities for technical implementation of data, computing, and software sharing principles.

### 6.2.1 Sharing Data

Per Principle 2 (Section 6.1), all data is to be equally accessible to all *SBN collaborators*. This shall include:

- Direct access to data files, e.g. via enstore, PNFS, or other data storage mechanisms. Ensuring that all SBN collaborators have credentials to enable such access will be the responsibility of the appropriate analysis infrastructure/software tools group in each member collaboration, directed by the SBN Analysis Infrastructure group conveners and in coordination with the Fermilab Scientific Computing Division.
- Metadata required to locate and interpret files. This includes, but is not limited to, listings of SAM datasets for production samples. This information must be distributed in a location accessible to all SBN collaborators. Availability of datasets should be broadly announced to the SBN collaborations (*e.g.* via e-mail to the appropriate SBN-wide mailing lists).

Release of certain data to *the public* may be required, for example, by funding agencies. In the case of data pertaining to SBN papers and proceedings, the specific format and public distribution of data releases either via the SBN website or inclusion in a public repository (e.g. HEP Data or NUISANCE) shall be shall be determined by and executed under the oversight of the SBN analysis coordinators in consultation with the appropriate analysis groups and Paper Team (see 3.4.2). In the case of data pertaining to single-collaboration papers, the appropriate member collaboration leadership will hold that responsibility.

Access of data beyond what is typically available in a public release by *non-collaborators* shall be evaluated on a case-by-case basis and formalized in a Memorandum of Understanding (MoU) that must be approved by the SBN Institutional Board. Such an MoU is to be presented by an SBN collaborator proposing the external collaboration to the SBN IB.

### 6.2.2 Sharing Software

Per Principle 3 of [2] (see section 6.1), all software developed for analysis by SBN member experiments is to be fully available to all *SBN collaborators*.

To facilitate this sharing, any software, supporting data, and related documentation relevant to simulation or analysis of experiment data shall be stored in a commonly-accessible version-controlled repository. Specifically, source code should be stored within the `SBNSoftware` organization on GitHub, which is managed by the SBN Analysis Infrastructure group. By default, these repositories should be publicly-accessible repositories. Exceptions for private repositories (including temporary exemptions, as for embargoes), or for source code that cannot be hosted in the central GitHub organization, may be granted at the discretion of the SBN Analysis or Analysis Infrastructure coordinators. For source code hosted at other locations, it is the responsibility of the source code owner and SBN Analysis Infrastructure conveners to publish a centrally-available list of code locations or access instructions. All SBN collaborators shall have access to all software repositories and documentation, regardless of whether they are accessible to the general public.

Re-use of SBN software with the SBN member collaborations is encouraged, and facilitated by the use of a common software framework. Proper acknowledgement is essential to appropriately crediting developers and avoiding plagiarism.

Use of SBN software external to the SBN is also encouraged, and enabled by use of the common LArSoft framework. Guidelines for proper use and attribution shall be defined and formalized via one or more software licenses that will apply to publicly-available SBN software.

Policies for proper attribution and software licensing should be developed by the SBN Analysis and Analysis Infrastructure groups. A policy recommendation should made and brought to the SBN IB for ratification.

## 6.3 Management of data and computing resources

Resources for large datasets and computing, including allocation of common grid computing slots at Fermilab and other computing centers, allocations of additional computing resources like at HPC centers, data storage pools (both disk and tape), and bandwidth for the movement and staging of data should be shared across the SBN physics program as much as possible in order to allow for efficient execution of the SBN physics program.

On at least an annual basis, the SBN Analysis Infrastructure (SBN AI) group coordinators should present an assessment of available computing resources, needs for additional resources, and plans for allocation and prioritization of computing resources to the SBN analysis group coordinators and the appropriate leadership of the physics and software groups within the SBN member collaborations, for their approval. A summary of the approved data and computing plans should also be presented to the SBN IB. The details of what should be included in this plan are given in the sections below.

### 6.3.1 Inventory of existing and inclusion of new resources

The SBN AI group should maintain an assessment of available computing resources with the SBN. This should include computing resources made available by the host laboratory (Fermilab), as well as additional resources made available through member institutions within the SBN member collaborations.

It is highly encouraged that SBN member institutions contribute additional data and computing resources, and pursue opportunities to gain new ones for use within the SBN. Use of new data and computing resources should be coordinated with the SBN AI group, and any required commitments of their particular use and availability made clear (*e.g.* for storage of raw data from one detector, or for development and application of deep learning algorithms). SBN members developing new proposals for data and computing resources to be used by the SBN program should communicate these plans to the SBN AI group in order to ensure that any accompanying resources (*e.g.* data transfer to computing centers) can be planned for and accommodated.

#### 6.3.2 Determination of needs for data and computing resources

The SBN AI group should also maintain an assessment of the needed data and computing resources within the SBN. These needs should cover all aspects of resource usage, including but not limited to: expected collected and produced data volumes, memory usage and processing time in computing jobs, and necessary bandwidth for data transfer between computation sites and data storage sites. The SBN AI group should also determine and collect requests for necessary data samples to be produced. Developing and maintaining these data sample and computing needs should be done with the relevant working groups within the SBN joint analysis group and within the SBN member collaborations. Needs should consider both the needs of analysis that make use of data from both detectors as well as the needs of analyses that make use of data from single detectors.

After presentation and approval of the data and computing resource needs within the SBN organization, the SBN AI group should coordinate the preparation of any needed requests for resources on behalf of the SBN member collaborations. An example of such a request is the annual presentation to Fermilab Scientific Computing Divsion on use of and planned needs for host laboratory computing resources.

#### 6.3.3 Prioritization of available data and computing

Planning and use of data and computing should consider the needs of analyses that make use of data from both detectors as well as the needs of analyses that make use of data from single detectors. Prioritization should follow these general sets of guidelines:

- Production and analysis of datasets that will be of greatest use in *both* multi-detector analyses and single-detector analyses should have high priority. This includes many samples related to simulation of and reconstruction of data from BNB neutrinos.
- Production and analysis of datasets that are critical to the proper simulation and reconstruction of data should also have high priority. This includes data and analysis needed for proper detector calibration and studies of detector modeling.
- Production of and analysis datasets that are needed primarily by analyses of data from a single detector should generally have lower priority.
- In all cases, the impact of making datasets available to support timely completion of analyses across the overall physics program of the SBN should be given high consideration. For example: computing resources needed for a specific analysis (either multi-detector or single-detector) may be prioritized to expedite its completion to enable a presentation at a conference or submission of a publication.
- Appropriate computing resources should be made available for development and testing of simulation, reconstruction, and data analysis workflows. However, allocation of significant computing resources should only be given to workflows that have been properly tested and validated.
- Computing resources should be maintained at some base level to support all analysis activities. This includes some base level of resources available to member collaborations, which can be managed more directly by that member collaboration.

As stated in Section 6.3.2, the SBN AI group should collect requests for additional large-scale needs for computing resources from members of the SBN collaborations, coordinated through the appropriate working groups, that may sit outside of the general computing coordination plan and work to meet those requests.

Significant updates to allocation and prioritization of resources should be presented to the SBN Analysis group coordinators and the appropriate leadership of the physics and software groups within the SBN member collaborations for their approval, as necessary. This may be especially required ahead of major data production and analysis campaigns.

### 6.4 Integration with analysis processes

Analysis procedures may require temporary alterations to the general principles on data and software sharing among SBN members and thus may have a direct impact on data and computing coordination. Examples may include but are not limited to removing access to 'blinded' datasets; removing access to elements of data to obscure essential properties (like POT in data, or truth information in simulation events); and, removing access to software and configuration for 'fake data' datasets used to test analysis sensitivity or bias.

Any such procedures must have a coherent implementation that considers access to data and software for all SBN members across the entire SBN physics program, and require input from stakeholders in the SBN Analysis organization and analysis groups and the leadership of the SBN collaborations. The SBN Analysis and Analysis Infrastructure coordinators should, as necessary, consider exceptions to data sharing policies and craft and execute policies for their implementation, in consultation with the appropriate physics and analysis leadership within the SBN collaborations.

## 7 Updates to This Document

This document should be updated as needed, with any changes to be approved by the SBN IB.

## A Authorship Opt-In Process

The author list for single-collaboration papers will be that of the individual collaboration with additional authors from other SBN experiments identified by the opt-in procedure described in this appendix. The guiding principles in implementation of this policy should be to ensure fair credit for the extensive shared development of software and analysis tools among SBN collaborators while retaining maximal independence for individual collaborations and imposing minimal additional burden on paper authors. A fair policy must be reciprocal, symmetric between collaborations, and transparent to all SBN collaborators, so the SBN Publications Committee will be responsible for implementation of the opt-in procedure.

- **Paper authors** will provide a brief summary of the simulation, reconstruction, and analysis tools used in the analysis presented in the publication. This summary will be posted in the same DocDB entry as the paper draft in advance of the collaboration review described in Section 3.4.4.
- The **Publications Committee** will distribute the paper abstract and tools summary to all SBN collaborators, reminding everyone of the opt-in process and requesting that those who have contributed to the software in the tools summary or made other intellectual contributions to the result opt in to authorship. If possible, this communication will be made via a channel that will also reach legacy authors who are no longer SBN members. The committee will be responsible for establishing a web form or other efficient method for collaborators to opt in.
- **SBN collaborators** who have contributed to the software described in the tools summary or made other intellectual contributions to the paper are responsible for opting in to authorship within a one-week collaboration review period. Opt-in authors must state explicitly what intellectual contribution they have made and provide their preferred name/affiliation for the author list.
- At the end of the collaboration review period, the **Publications Committee** will compile a list of additional authors, with a brief justification for each, and provide this to the individual collaboration for addition to the author list. If Publications Committee members or the spokespeople of either collaboration find an opt-in claim to be of dubious merit, they may seek further information on the contribution and/or challenge the authorship claim.

- The **Publications Committee** will distribute the paper with the final author list to all authors for a final round of review, lasting one week. Note that this will be the first time the opt-in authors have a chance to review the full text of the paper. The committee will communicate to the individual collaboration and the spokespeople of both collaborations any concerns about authorship and content raised at this stage and will facilitate communication among all parties with the goal of reaching consensus. In the event there is an authorship or content dispute that can not be settled by consensus, the SBN IB will be asked to make the final decision.

# B Single Detector Analysis by Non-Collaborators

As described in the Statement of Principles for Data Sharing, Analyzing, and Publication within the SBN Program, all data taken at Fermilab by either the near or far detector are to be made available promptly and with equal access to any member of the SBN program (Principle 2), and any member of the SBN program may pursue any analysis topic that they wish (Principle 4).

SBN members intending to pursue an analysis that utilizes data from a single detector, but who are not members of the relevant collaboration, should consult early in the process with the Spokespersons and Analysis Coordinators from the relevant collaboration in order to agree upon the analysis scope and plan for appropriate access to collaboration information and resources. To qualify for this access, the analyzer(s) must perform some contribution of service to the collaboration, which must be identified and mutually agreed upon by collaboration leadership and the analyzer(s). Examples include, but are not limited to, contributing to data/MC production efforts or developing tools for detector calibration. Classification of the result, results approval, and authorship of resulting papers will be determined as usual, following the rules described in this document.

# C Document Authors

This document was drafted by the following IB sub-committees, in consultation with the SBN IB, the ICARUS and SBND IBs, and the SBN Oversight Board.

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# References


[1] SBN Organization. URL: `https://sbn.fnal.gov/collaboration/oversight-board.html`. (accessed: 24.05.2022).

[2] Statement of Principles for Data Sharing, Analyzing, and Publication within the SBN Program. URL: `https://sbn.fnal.gov/collaboration/oversight-board.html`. (accessed: 24.05.2022).