



By-Laws of the Subduction Zones in 4 Dimensions Initiative (SZ4D)

Effective: August 30, 2024

1. Preamble

- a. The By-Laws of the Subduction Zones in 4 Dimensions Initiative (SZ4D) are adopted by the SZ4D Steering Committee for the purpose of conducting SZ4D business in a collegial manner.

2. Name, Purpose, and Definition of the SZ4D Initiative

- a. Name - Subduction Zones in 4 Dimensions Initiative (SZ4D)
- b. Purpose - SZ4D is a community-driven initiative for a long-term, interdisciplinary research program to understand the limits and possibilities of predicting subduction zone geohazards. A cornerstone of SZ4D is to bring together a diverse community of scientists from a wide range of disciplines and backgrounds who study earthquakes, volcanic eruptions, and catastrophic surface processes.
- c. Definition and responsibilities of the SZ4D Initiative
 - i. Definition
 1. The SZ4D Center (Section 3)
 - a. Executive Director of Center (Center PI)
 - b. Center Staff - managed by Center PI
 - c. The SZ4D Standing Committees and Ad-Hoc Committees (Sections 9-10) currently constitute the core body of the Center
 2. Steering (+Executive) Committee (Sections 7-8) is the governing body of SZ4D and directs the Center
 - ii. Responsibilities
 1. It is the responsibility of the SZ4D Initiative to define, organize, and lead this collective endeavor towards its adopted purpose (defined in Section 2b and the SZ4D Implementation Plan). Thus far, the SZ4D Initiative has used an NSF-funding to organize the ideas of several hundred subduction zone scientists into an Implementation Plan that defined the central science questions, research objectives, and recommended instrumentation and activities.



3. SZ4D Center

- a. Purpose
 - i. The SZ4D Center is the coordinating body of SZ4D
 - 1. Working Groups (WG), Integrative Groups (IG), and other planning committees (see [Appendix A](#)) currently carry out the work of the Center
- b. Responsibilities
 - i. Coordinating SZ4D Facilities
 - 1. Coordination of new facilities established through and for SZ4D would ultimately fall under the SZ4D Center to ensure coherent data collection and activity coordination throughout the duration of SZ4D
 - 2. Interface with existing facilities to:
 - a. Manage and leverage their resources for SZ4D data collection and will support new facilities
 - b. Coordinate data management and identify new cyberinfrastructure needs
 - c. Facilitate access to all SZ4D data through a common data portal
 - 3. Determine the appropriate facilities and entities to task with Critical Data Collection needs communicated to the Executive Director by the Steering Committee
 - ii. Providing logistical support to the SZ4D community and designs effective communication strategies to engage the community and develop international partnerships
 - 1. Organize virtual and in-person meetings and workshops, facilitate communication between committees and facilities, prepare and disseminate documents, and maintain the SZ4D website and mailing lists
 - 2. Communicate regularly with NSF and other agencies (e.g., NASA, USGS, NOAA) to coordinate and report on current resources that enable SZ4D activities
 - 3. Provide a point of contact for international and domestic partner organizations. Develop partnerships that promote the SZ4D mission.
 - iii. Integrating science planning
 - 1. Ensure that the multidisciplinary efforts are coordinated following a Collective Impact model/maximize SZ4D's Collective Impact
 - iv. Facilitating the work and Building Equity and Capacity with Geoscience (BECG)



- v. Coordinating science integration, data products, stakeholder and partner engagement, and BECG efforts across the SZ4D community groups
- c. Definition of the SZ4D Center
 - i. Center Management
 - 1. The Executive Director of the SZ4D Center will be directly accountable to the SZ4D Steering Committee. The Steering Committee has final authority on determining if the Executive Director is acting in the best interests of SZ4D and thus represents the initiative.
 - a. The Executive Director is the PI of the current grant funding Center activities as defined in 3b.
 - b. The Executive Director/Center PI will generally also serve as the Chair of the Executive Committee.
 - 2. Professional Staff - will provide continuity, logical support, points-of-contact, direction, and management for the program.
 - ii. Removal or resignation of Executive Director
 - 1. Should the Executive Director be no longer able to serve or the Steering Committee decide that the Executive Director is no longer acting in the initiative's best interests, the Steering Committee can remove the Director from their role as representative of the initiative. In the unlikely event of such a situation, the Steering Committee can remove the Director from their representative role and select a new Director by a vote as defined in Section 4d.
 - 2. The role as representative of the initiative is recognized to be distinct, but intertwined, with the role of Center PI. Should the Steering Committee decide that it is in the initiative's best interests to have a new Director, they should promptly inform both the PI's home institution and the funding agency.

4. SZ4D Governance

- a. Purpose
 - i. Guide program evolution, evaluate progress, coordinate all involved communities, ensure information transfer, and foster partnerships for SZ4D.
- b. Definition and responsibilities of SZ4D Governance structure
 - i. Coordination group of volunteers that are representatives of their communities as per current committee charges (see Sections 6-10 and [Appendix A](#)).



- ii. All committees are encouraged to invite input from people that are not on their committee. The responsibility for synthesizing information and making recommendations lies with the committees.
- iii. Standing Committees (Section 9)
- iv. Ad hoc Committees (Section 10)
- c. Appointments
 - i. The Committee on Committees (CoC, Section 6) develops a committee slate once per year. The CoC recommends slates of candidates for each of the Standing Committees to the SZ4D Steering Committee, as well as co-chairs for each committee and group.
 - ii. Committees may add additional interim members as necessary to address missing expertise at any time. These interim members are then assessed in the next committee slate process and, if confirmed, can continue to serve out a full term of service. This process can include additional co-chairs as the committee views necessary to best meet their charge. All SZ4D Committees can include both domestic and international members.
 - iii. Term of Service
 - 1. Three-year terms will be staggered such that each year the CoC will recommend a slate with a target of two-thirds current members and one-third new members.
 - iv. Removal or resignation
 - 1. Committee members may resign at any time. In the unlikely event that a committee member's service is no longer viewed as in the best interest of the SZ4D Initiative, a committee can recommend their removal by vote as defined in Section 4b. The recommendation of removal is then made to the CoC, who will have final authority over the potential removal. This procedure can include committee chairs.
- d. Voting rules
 - i. Many issues may be resolved by the committee with consensus and committees are encouraged to discuss issues sufficiently that consensus should often be achieved.
 - ii. Significant issues should have a formal vote. Quorum for voting is $\frac{2}{3}$ membership. Simply majority carries votes except for the special circumstances as specified elsewhere in these by-laws.
 - iii. The process for voting is by online forms administered by the SZ4D Program Manager or their delegate. Normal practice requires discussion by the committee at a meeting prior to votes. Votes without prior discussion require specific approval of the committee chair and should be reserved for exceptional issues that are unusually time-sensitive.
- e. Conduct



- i. All members of SZ4D Governance are expected to abide by the SZ4D Code of Conduct ([Appendix B](#))

5. Resolution of Conflicts

- a. The SZ4D by-laws should not be construed as overriding the standard responsibilities and prerogatives of Principal Investigators or their respective institutions. However, situations and issues may arise for which resolution through standard procedures cannot be achieved. Ultimately, the policies of the funding programs and institutional requirements must be respected. Consequently, if the Principal Investigators and Steering Committee are unable to reach agreement on a given issue, the Principal Investigators will retain ultimate authority to make and implement decisions on SZ4D programs and policies that relate to their role as Principal Investigator on formal SZ4D grants and contracts.

6. Committee on Committees (CoC)

- a. Charge
 - i. The CoC develops slates of candidates for the Standing and Steering Committees. It combines nominations from each committee, volunteers from the community, and scientists identified by the CoC's own deliberations to ensure diversity balance by discipline, institution, and demographics. Committee members should be selected from scientists based at academic, non-profit and government institutions. The CoC is empowered to adjust committee size as necessary to maximize participation in SZ4D.
- b. Membership and Terms
 - i. A slate of CoC members is recommended each year by the BECG (Building Equity and Capacity with Geoscience) Integrative Group. Terms should normally be 3 years with staggered rotation of $\frac{1}{3}$ of the committee each year. The slate must be approved by the current Steering Committee.

7. Steering Committee (SC)

- a. Charge
 - i. The SC decides on and oversees all SZ4D activities. The SC is also charged with overseeing the general operations of SZ4D, including ensuring a suitable meeting calendar, effectively using the budget to forward SZ4D goals, and resolving competing objectives between



- committees. Major strategic decisions will be brought to and made by the SC. All proposals committing SZ4D staff and facilities must be approved by the SC. The active SC approves committee and WG and IG nominations provided by the CoC. The SC assigns liaisons to all other committees from the SC membership.
- ii. Oversee the work of the SZ4D Center, guided by input from three working groups and two integrative groups plus two planning committees.
- b. Membership
- i. Like all committees, the Steering Committee will be populated by the Committee on Committees. Membership will generally include the co-chairs from the committees of SZ4D as well as the Executive Director, and Steering Committee Chair (See Section 3).
- c. Steering Committee Chair
- i. The SC Chair is responsible for running SC meetings, serving as a point of contact for external partners and agencies, organizing and facilitating agenda-setting for SZ4D, and serving on the Executive Committee.
 - ii. A Chair of the Steering Committee will be recommended by COC and approved by the Steering Committee for a 3 year term.
 - iii. The SC Vice-chair will be elected by the SC and can serve as a substitute for the Chair for all of the above duties.

8. Executive Committee (ExCom)

- a. Charge
- i. A subcommittee of SC serves as the Executive Committee (ExCom), which meets more frequently than the SC and curates information for SC decisions. The ExCom is charged with developing and coordinating strategies, responding to funding opportunities, and pursuing potential partnerships. ExCom and its members may also serve as points of contact with agencies and international partners as needed. During the transition period, the ExCom will initially retain its current membership and will institute staggered terms of three years to refresh its membership as SZ4D grows. The PI of the SZ4D Catalyst proposal retains *ex officio* roles as long as Center activities are covered under that grant. Future Center PI(s) would assume the same *ex officio* roles.
 - ii. Oversee the work of the SZ4D Center, guided by input from three working groups and two integrative groups plus two planning committees.
 - iii. Communicate regularly with NSF and other agencies (e.g., NASA, USGS, NOAA) to coordinate needed resources that enable SZ4D activities



- iv. For SZNet, the SZ4D Executive Committee is charged with organizing input and participation in all SZNet activities on behalf of their discipline.
- b. Composition
 - i. Chair
 - 1. The Executive Director Chairs the Executive Committee.
 - ii. The Executive Committee will generally include representatives from a selection of the Standing Committees. As the SZ4D Initiative evolves, the correct balance of representation will be reevaluated by the Committee on Committees each year in consultation with the Steering Committee and other current committees.

9. Standing Committees

- a. Charge
 - i. Standing committees are long-term structures designed to carry out the work of the Center. Individual charges of current SZ4D Standing Committees are given in [Appendix A](#).
- b. Composition
 - i. Standing Committees should generally have co-chairs whenever practical. If necessary, a single chair may be appointed. Chairs are recommended by the Committee on Committees and approved by the Standing Committee as described in Section 6. In the case of a midterm change in personnel, see Section 4civ.
- c. Establishment and Obsolescence of Standing Committees
 - i. The Steering Committee at any time can retire or add Standing Committees to better meet the SZ4D mission with a simple majority vote. New Standing Committees must have a written charge at the time of establishment. [Appendix A](#) of the by-laws should be updated as appropriate for the current set of Standing Committees.

10. Ad-hoc or Special Committees

- a. Formation
 - i. Generally speaking, ad hoc committees are commissioned from existing SZ4D governance. Additional ad hoc subcommittees of specialized expertise may be convened by any committee as necessary as SZ4D moves to a fully built configuration. A committee can be established by creating a written charge, an initial committee membership and submitting it to the SZ4D Program Manager for recording.



1. Recognized ad hoc committees agree to follow SZ4D Governance by-laws (Section 4) and utilize SZ4D resources in coordination with the Center
- ii. Efforts outside SZ4D that want to join the SZ4D Center to better use the name, resources, committee and meeting structure can propose themselves to the Steering Committee for approval by vote. The proposal should include a charge for the committee, proposed initial committee members and an explanation on why it is mutually beneficial to join SZ4D.
- b. Composition and Appointments
 - i. Ad hoc committees should agree on a Chair or Co-chair at their first meeting. By definition, ad hoc committees are temporary and thus committee members are assumed to remain with the committee until dissolution or resignation. If it is necessary to remove a committee member, the general procedures in Section 4.c.iv apply.

11. Funding and Proposals

- a. Proposals related to SZ4D
 - i. Organizational proposals
 1. Organizational proposals are defined as those which require a Letter Of Collaboration (LOC) from SZ4D
 2. The SZ4D initiative actively seeks funding to execute the Implementation Plan. The Steering Committee is charged with developing and encouraging proposals that will further the Implementation Plan and the SZ4D mission.
 3. Individual committees may also bring proposal ideas forward as part of their work. Proposals that originate in the work of SZ4D committees and commit SZ4D resources require SC approval following the procedure in section 11.v.3 below.
 4. PIs of Organizational proposals should be selected by the cognizant committee who developed the proposal. If Center staff is budgeted, then the Center Director must co-PI the proposal.
 - ii. Individual proposals
 1. It is expected that in the course of their research, SZ4D scientists will ordinarily write proposals to support their individual efforts through ordinary channels. Individual proposals clearly do not require any SZ4D participation or approval.
 2. Occasionally, the identity of a project as an individual or organizational proposal is unclear. When ambiguity exists, individuals serving on SZ4D committees should bring the issue to their current committee of service to evaluate whether the project



should be an SZ4D organizational proposal. The committee will consider the following criteria in their evaluation: (1) If SZ4D resources, including committee time, is required for the execution of the proposal, (2) if the scientific and inclusivity aims of SZ4D are best served by an organizational rather than an individual proposal and (3) if any current collaboration agreements require SZ4D organization to play a role in the proposal.

3. Special consideration needs to be paid to proposals led by senior personnel at SZ4D, who ordinarily PI organizational proposals and thus any proposal with their participation is de facto an SZ4D proposal. The Director and members of the Executive Committee will inform the Steering Committee of any SZ4D aligned proposals that they lead or participate in a representational role. The Steering Committee will decide if organizational approval is required.

iii. Letters of Collaboration

1. SZ4D will provide a LOC only for proposals that require a commitment of action or resources by SZ4D.
2. All proposals that commit SZ4D resources must be approved by the Steering Committee. SZ4D resources in this context include SZ4D, existing SZ4D funds and the SZ4D governance structure. In particular, any proposal that explicitly relies on the SZ4D Committees requires SC approval.
3. Process for Letters of Collaboration
 - a. To consider a proposal, the SC must be given information about the committed resources, the potential benefit to SZ4D, and the cognizant SZ4D Standing Committee that would serve as oversight for the effort if funded.
 - b. Requests for letters of Collaboration should be jointly addressed to the chair of the Steering Committee and the closest disciplinary contact in the SZ4D Governance structure. Appropriate disciplinary contacts might include co-chairs of any of the Standing Committees that are closely aligned with the effort.
 - c. For full consideration, requests should be received at least 3 weeks prior to the required submission date.
 - d. All letters of collaboration should be discussed and approved by the Steering Committee following the procedures in Section 4. Criteria for approval include alignment with the SZ4D mission and appropriate use of SZ4D resources.



- e. Approved letters of collaboration can be signed by the Steering Committee Chair and/or the disciplinary contact on behalf of SZ4D.
- iv. Letters of Support for International Proposals:
 - 1. If permitted by the funding agency, SZ4D may also provide Letters of Support expressing an alignment of the proposal with the SZ4D mission.
 - 2. The procedure for submission and review of the request is identical to that for Letters of Collaboration.

12. Amendments to the By-laws

- a. All by-laws of SZ4D shall be subject to amendment or repeal, and new by-laws may be made, by an affirmative vote of the SZ4D Steering Committee, upon which these changes take effect immediately. The SZ4D Program Manager is charged with maintaining the authoritative copy of the current set of by-laws.

Appendix A: Current Standing Committee Charges

a. Collective Impact Advisory Committee (CIC) Charge

The CIC supports scientific priorities and broader impacts by monitoring SZ4D scientific and capacity building activities and advising the SCon ways to better meet SZ4D's Collective Impact goals, such as redistributing resources. The CIC is composed of representatives from each of the active members of disciplinary communities, Integrative Groups, and Facility committees. Expertise in science relevance to agencies beyond NSF are included in this committee (e.g., NASA, USGS, NOAA). Co-chairs of the CIC will regularly report to the SC. The target size of CIC is 15-20 members.

b. Operations Planning Committee (OPC) Charge

Note: OPC went through reorganization in early 2024. The SZ4D Steering Committee voted on the new OPC-A and OPC-I charges (see below), approved on March 7, 2024.

i. Operations Planning Committee for Activities (OPC-A) Charge

OPC-A is charged with oversight, coordination, and integration of activities and data to complement physical infrastructure planning. For the purpose of this charge, "activities" means field, laboratory, modeling, and imaging scientific activities. The charge includes:



- Identify and plan for high priority experimental, field, & modeling activity needs from Implementation Plan that are not currently being addressed
- Work with CIC and SC to identify PIs and funding sources for high priority needs
- Respond to evolving scientific priorities of activity-focused working groups (MCS, ...) or similar groups in future center organizations.
- Support and advise organizational SZ4D facility activity proposals during development including data management plans and non-instrumentation facility plans
- Develop data management and sharing plans and protocols that proactively promotes data assimilation needs
- Support development of physical sample storage and dissemination
- Support development of and sustained access to Cyberinfrastructure
- Advise operations of funded organizational proposals for activities, including advising on the implementation of the data management plans
 - This role should include a regular reporting schedule for all funded organizational collaborative activities

ii. Operations Planning Committee for Infrastructure (OPC-I) Charge

OPC-I is charged with oversight of planning for SZ4D infrastructure construction and operation, including:

- MultiArray (Chile),
- Onshore/offshore domestic instrumentation,
- Physical Infrastructure required for GeoArray,
- Physical Infrastructure required for modeling,
- Physical Infrastructure required for experiments and sample archiving.
- Physical Infrastructure required for data management
- Other physical infrastructure identified by OPC-A or WGs.

The OPC-I will support the development of SZ4D infrastructure proposals by:

- Making informed recommendations to proposal development teams (based on scientific guidance and technical guidance as appropriate and in reference to the Implementation Plan and Array Success Criteria) regarding:
 - Instrument types, numbers, models, etc
 - Deployment locations (blobs-to-targets-to-dots) and modes (e.g., telemetry, power, logistics, etc)
 - Staffing requirements for infrastructure construction and operation
- Making informed recommendations on the relative priority of competing infrastructure needs
- Reviewing and overseeing infrastructure proposal budgets (for completeness, bloat, accuracy)



- Developing and implementing a change control process for MultiArray and domestic onshore/offshore deployments.

OPC-I will report regularly to the Steering Committee (through a co-Chair) on its activities.

OPC-I will regularly coordinate with other SZ4D committees and external groups:

- Solicit scientific guidance from WGs as a basis for recommendations to infrastructure proposal PIs and to Steering Committee
- Solicit technical guidance from infrastructure vendors, relevant facilities (OBSIC, Earthscope, RAPID, etc), and community members with relevant expertise
- OPC-I should also synchronize with facilities and projects related to SZ4D (Earthscope, OBSIC, CRESCENT, etc) to remain knowledgeable about and responsive to complementary infrastructure efforts.
- OPC-I should synchronize with OPC-A to remain knowledgeable about developing data management plans and other infrastructure needed to support activities.

c. Working Groups and Integrative Groups Charge

During the transition period, the working groups (FEC, L&S, MDE) and integrative groups (BECG, MCS, GeoArray) will maintain activity with refreshed memberships. These groups are viewed as representative of the community and should consult regularly with members of the community to assure alignment between community needs and SZ4D actions. The target size for each working and integrative group is 10-15 members.

Appendix B: SZ4D Code of Conduct

([LINK](#) to code of conduct)

Appendix C: Best Practices

In the course of constructing the by-laws, several issues arose in discussion. These concepts and procedures are not policy nor do they have the forces of the above By-Laws. They are best practices that should be kept in mind as SZ4D moves forward.

Feedback is essential for good Center functioning. Regular, anonymous surveys to all committee members should be established.

Coordinated efforts require coordinated data infrastructure. Committees maintain a shared Google Doc with running meeting agendas and notes (restricted to current committee members) for continuity/reference.