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Authors		
Zachary Mainen, Hannah Bayer, Eric DeWitt, Catalin Mitelut		
Editors		**Working Group**
Zachary Mainen, Hannah Bayer, Eric DeWitt		Governance WG
Abstract		
This proposal outlines a plan for the IBL to expand and evolve while maintaining its primary aims by developing new large-scale collaborations ('Big Projects'), composed of subsets of IBL members. Each Big Project has its own scientific aims and leadership but cooperates fully with other projects under the IBL-wide principles of consent decision-making, data sharing, project registration and reagent sharing.		

IBL Big Projects Proposal

Preamble

This proposal addresses a number of issues that have arisen concerning the future of the IBL. The main purpose of this policy is to provide a mechanism and structure for the expansion of the IBL through new "Big Projects" with their own funding that include subsets of IBL members.

Two issues have invited us to consider new funding sources for the IBL.

First, the IBL must secure additional funding in order to continue. The main Wellcome Trust grant supporting all of IBL shared infrastructure (personnel, data architecture, etc) will expire in 2025 and the Wellcome Trust has indicated that it will not be renewed. These resources are valuable to IBL and the community and it would be desirable to see them continue to operate even if the IBL project ends. The IBL can seek replacement funding for its infrastructure (data architecture, staff, common equipment, governance) through grants for infrastructure from other agencies, but the number of such opportunities is limited and international eligibility is even more so. The IBL may consider alternative schemes such as packaging and selling infrastructure as services.

The entire SCGB program itself will end in 2022 (3 more years). The SCGB supports all of the PI contributions to the IBL, including postdoc salaries and associated supplies. It is not clear whether the SCGB program will be renewed and in what format.

Second, in spring of 2019 a group of PIs within IBL requested the GA to apply for an NIH grant, “Neuronex” with a project closely based on the current IBL task and including many but not all IBL members (due to non-eligibility) plus additional non-IBL PIs. The request was approved by the GA (May, Paris), contingent on the grant contributing substantially to IBL-wide shared resources. This application opened various questions concerning how it would be integrated within the IBL, which this policy attempts to address, including:

- What contributions must a new grant make to support the infrastructure of the IBL?
- Can new PIs be included and do they become IBL members?
- Does the new project join the data sharing?
- What resources from IBL are available to the new grant?
- What are the obligations of new Neuronex to working groups?
- Who is responsible for accomplishing the aims (deliverables) of the new grant?

These issues ask us to consider what are the goals of IBL and how do those relate to the possibility of expansion through addition of new projects.

A major overarching goal of the IBL is to change the way science is done. It seeks to develop and spread practices that foster better, more efficient, more open, and more team-driven science. For this, it is desirable to spread its practices to a wider group of scientists. This could occur merely through mimicry: distribution of information, open source code and data, etc. However, for some of the key benefits of the IBL, such as unconditional data sharing, a copy would create the opposite effect of expansion: it would create two parallel efforts that would be redundant and firewalled from one another. While mimicry may be appropriate for scientists pursuing distantly related topics, with incompatible data and divergent interests, expansion may make more sense for closely related projects, such as the range of work already going on in IBL labs that is not yet part of IBL. This policy contemplates such expansion and how it would work.

In addition, some IBL members are not satisfied with the current IBL focus but support the IBL mission and wish to further it. They have a strong desire to expand the scientific scope of the IBL to include new questions that are related to the current project but would require new resources, such as new rigs and new postdoctoral fellows, to accomplish. Since these unmet desires attest to the fact that even the existing IBL members do not have a uniform set of scientific goals and interests, it is unlikely that the areas of expansion would be consensual. Even if they were, there are very few grant opportunities that allow for the full IBL to participate, given its size and international distribution. Therefore, a mechanism for allowing smaller groups of IBL members to seek funding for new projects is desirable and is addressed by this policy.

The IBL also recognizes that there are areas where it could benefit by including new colleagues with missing scientific expertise, some of whom are already closely linked to the IBL, including

for example, former IBL postdocs. Yet, other than replacement of existing members, there is no existing means to do that. In particular, although IBL could invite new members through its membership policy, a means to provide funding for them and for them to contribute funds to the common infrastructure is needed. This policy provides a mechanism for such expansion, addressing how new projects are added. It leaves the issue of new membership independent from their project funding.

Finally, and importantly, although this policy contemplates expansion, it deliberately leaves the decision to accept new projects or members with the IBL governing body, the General Assembly. The GA retains control over whether, by what criteria, and how fast to expand. This policy does not intend to set expectations for the rate or amount of growth because it is not yet clear and consensual how quickly the IBL could or should grow. The IBL governance structure was drawn up with the vision of the possibility of a much larger group, perhaps as large as the large-scale collaborations at CERN, but this is a work in progress and it is not clear if the scientific problems merit such a large-scale approach or whether our organization could sustain it yet. A much larger IBL would be a looser confederation than the current IBL, defined not by a single scientific goal, but by a way of doing science that is more cooperative and therefore more effective. This policy opens the door toward this possibility but does not demand it.

Definition

1. A Big Project is a major scientific objective, generally with its own grant or other funding source. The SCGB/Wellcome scientific projects (brainwide maps) and the Neuronex Project are examples of Big Projects.
2. Big Projects must adhere to the principles of the IBL as defined in the IBL Charter and active IBL Policies: complete data sharing, project registration and resource sharing with the entire IBL (not just within the project), etc.
3. A Big Project should be a major initiative—one with larger goals that could not be readily accomplished by a single laboratory—in keeping with IBL's focus on large-scale science.
4. A Big Project could—but need not be—equivalent to the scope of a grant. A Big Project can include members who are not funded by the grant and, conversely, the grant can include aims and members that are not part of the Big Project or IBL.

Selection

1. Big Projects should be aligned with the scientific interests of the IBL and complementing (not competing with) other Big Projects. A preference should be given to Big Projects that take specific advantage of existing IBL resources and expertise.
2. The IBL should define and make public the criteria for selection of new projects, including the relevant aspects of the present policy, the number of projects being considered, and the relevant deadlines for consideration.
3. Proposals for big projects should be considered from within the IBL and, in principle, from outside. Outside proposals should have sponsorship from at least one-third of the

IBL GA. A competitive process should be used if there are more proposals than can be accomodated.
4. The decision to undertake a Big Project should be approved by consent of the GA on the basis of a proposal, similar to a grant pre-proposal.
5. The GA should review and consent to the final grant proposal, similar to an IBL manuscript.

Membership

1. A Big Project has a Team of PIs and junior team members (postdocs, technicians, etc.) responsible for delivery of the scientific aims.
2. Not all IBL PIs are expected to participate in all Big Projects, but all IBL PIs should have the opportunity to opt-in to a Big Project.
3. A Big Project may include new PIs, who will join the GA. New PIs on a Big Project must be approved by the normal Membership Policy.

Resources

1. A Big Project should be fully self-funded, usually in the form of a grant. That is, a new Big Project is required to provide funding for any equipment or resources required to carry out the project.
2. Big Projects should adhere to existing IBL-wide standards (e.g. data formats, rig parts, animal protocols) whenever possible.
3. Big Projects must provide the financing to support the common infrastructure in proportion to its use. This must be budgeted in coordination with the IBL EB and Programme Manager.
4. Team members of the Big Project must contribute to IBL Working Groups, as defined in the Membership policy.
5. Whenever possible, Big Projects should not use separate Staff, infrastructure or other resources, but should instead contribute to the common ones.
6. If equipment or other resources devoted to a Big Project are not fully utilized for the aims of that project, then if feasible, they should be made available for use by other Big Projects.
7. Once a Big Project has finished, any usable equipment or resources acquired for that project should be made available, if feasible, to other Big Projects or IBL infrastructure.

Governance

1. A Big Project has a Leader (i.e. principal investigator) who is responsible for reporting to the grant-awarding body.
2. The Leader of each Big Project sits on the IBL Executive Board.
3. All scientific decision-making within the Big Project is the sole domain of the Big Project Team and Leader, which is expected to operate by the IBL principle of consent decision-making.

4. Once the GA has approved the overall Big Project in the form of a grant proposal or similar, further GA approval is only necessary in the case of major deviations from the plan.
5. Big Project Teams should make regular presentations of progress to the GA, e.g. in the form of IBL-wide lab meetings.

Frequently Asked Questions

Does this mean that IBL no longer has a scientific focus?

No. The GA retains the prerogative and duty to review and decide on which new projects suit its scientific goals. This policy provides a mechanism that could be used to expand the focus but does not entail a loss of focus.

Does IBL risk splintering into different subgroups? Is expansion worth the risk?

To some degree, yes, this is a risk. Despite the IBL's dedication to large-scale team science, there remain few opportunities to obtain funding for such large-scale initiatives. Furthermore, it has been seen that the scientific interests of IBL PIs are already much broader than can be accommodated within a single focussed project. A carefully selected set of complementary Big Projects can allow the IBL to explore a more diverse but still coherent range of questions. Importantly, all Big Projects will adhere to IBL standardization and provide complete data sharing and project registration throughout IBL.

Do IBL members that are not part of a Big Project have any obligation to it?

No. Big Projects are not necessarily IBL-wide. They should be open to participation and open to sharing their plans (as all IBL projects), but participation is not compulsory. If an IBL member wishes to be part of a Big Project, but are not included in the relevant grant, they may opt-in. Staff roles should be clearly defined and their time budgeted at the time a Project grant and budget are prepared. Some Staff are dedicated to specific Platforms, e.g. Data infrastructure, that may inherently be required to support all Big Projects.

How does this policy allow IBL to recruit individual investigators?

The IBL membership policy (currently in proposal) provides for the election of new members, but does not provide mechanisms for funding them. The Big Project policy provides an organizational structure that can accommodate the expansion of IBL and allows for recruitment of members conditional on grant acceptance. In addition, new members could in principle be recruited with no funding, or funding could be reallocated from other members.

How much can we expand? What happens when IBL gets too big for meeting or decision-making?

The current organizational structure anticipated the need to accommodate substantial expansion. When needed, the GA could adopt a representative governance in which each Big Project, Platform or Institution would elect one or more members to sit on the GA.

How does a Big Project team relate to a Working Group?

Currently, IBL Working Groups serve a variety of functions. Under the new policy, some Working Groups would become Big Project teams and some would remain Working Groups. If a group serves only or primarily one scientific (as opposed to infrastructural) aim, then it would be a Project team. If it serves several or all, then it remains a working group (e.g. Governance). The current role of some WG's is a mixture of project specific and more general functions and might end up splitting. This seems to be one of the more complex implications of the proposal. Further discussion will be required to finalize groups and their scopes, and but a rough provisional view could be:

Governance WG	→ Governance WG
Publication WG	→ Publication WG
Data Architecture WG	→ Data Architecture WG
Histology WG	→ Histology WG
Brainbox WG	→ Data Analysis WG
Behavior WG	→ SCGB/Wellcome Project 1 → Behavior Standards WG?
Physiology WG	→ SGGB/Wellcome Project 2 → Brainwide Mapping WG?
Neural Analysis WG	→ SCGB/Wellcome Project 3 → Neural Analysis WG??
Behavior Analysis WG	→ SCGB/Wellcome Project 4? → ??
Theory WG	→ SCGB/Wellcome Project 5 ?→ ??
New Task WG	→ A new Big Project planning group (there could be more)

How does data sharing work for a Big Project? What about non-mouse data?

Immediate full data sharing (and Project registration) are *sine qua non* of the IBL. Each Big Project's data stream must be accommodated into the IBL data architecture, which generally will require the allocation of new programming, new compute or storage resources, etc. These must be budgeted in the Big Project grant. As much as possible new projects should adhere to already-developed IBL data standards (as well as relevant community standards). Data must be available not only within, but *across* Big Projects. Likewise, subprojects registered within one Big Projects should be available across. Data and projects should follow these policies regardless of species, behavioral paradigm, etc.