

Report of the Advisory Board for the FONDAP Center for Genome Regulation (CGR)

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The Advisory Board of the Center for Genome Regulation met on March 26/27, 2018 in Santiago, Chile to review the progress and evolution of the Center. In advance of the review, the Advisory Board received electronic copies of the Annual Reports for 2016 and 2017 and the Reviewer Evaluation Reports for the period of 2015-2017.

SUMMARY AND MAJOR RECOMMENDATIONS

The reviewers were uniformly in agreement with the overall organization and research strategy of the Center for Genome Regulation (CGR). The productivity as measured by ISI indexed publications is high and is a reflection of the continuing high quality of the CGR Principal Investigators. The organization of research themes that focus on unique Chilean genetic resources and extreme environments has been very effective and is now a very visible characteristic of the CGR which clearly sets them apart from other genome centers in other parts of the world. The CGR has developed genomics and bioinformatics research to a high level in Chile and this would probably not have occurred otherwise. There is a need for continuity of a genomics focused center to ensure that Chilean science stays abreast of this rapidly developing field that has become integral to every life science discipline, from plant ecology to human medicine.

Some specific recommendations are as follows:

- A recommendation from the last review to consolidate its bioinformatics capabilities to better serve the Center and the Chilean scientific community has only been partially met. A continued effort to form an actual bioinformatics “core” and to better communicate the capabilities to all Center members is needed.
- While the number of ISI indexed publications is high (~40-47 each year) most of these publications are not from the five CGR projects, but from non-CGR projects in the PI laboratories. This is in a way not surprising because the CGR projects tend to be very large in concept and execution and so may result in relatively fewer but larger (in terms of impact) publications. This may be a disservice to postdocs who need some publications within the timeframe of their CGR research. This is always a tension between smaller, more frequent publications and large, very high impact publications but the PIs should give some consideration to finding the appropriate balance.

- The CGR operates as a cohesive team at the Principle Investigator level but is less cohesive at Associate Investigator and postdoctoral levels. Attention is needed to build a stronger “Center” identity. This can be accomplished but will require a dedicated staff position to ensure effective internal communications, an internal website for sharing protocols and mandatory monthly events such as a high-level seminar addressing major themes of the CGR.
- Outreach to the broader Chilean society is important in demonstrating the value of science to society and in educating the general population. It can also be important in communicating the impact of the CGR to society and to policy-makers who may decide the long-term future of the CGR. It is a good time to dedicate resources to a significant outreach and communication program.
- In addition to public outreach, the CGR should consider hosting courses or workshops to extend pockets of expertise to the entire CGR membership as well as to the broader Chilean scientific community. The most obvious topic would be bioinformatics (perhaps genome assembly) but also topics such environmental metagenomic analysis could also be of interest. This could help remedy some of the internal communication issues as well as to build broader scientific recognition.
- Although there may not be time in the waning years of the CGR to remedy the gender imbalance some thought should be given to this somewhat glaring issue. Perhaps some things could be done by inviting prominent women seminar speakers to provide role-models to younger women researchers in the CGR.

OVERALL ASSESSMENT

The reviewers were, in general, impressed with the overall strength of the CGR, the quality of the investigators, the productivity in terms of research output, the number of student and postdoctoral trainees receiving advanced training and the decisions that have been made in establishing the capabilities of the Center.

Research: The strength and quality of the research is very high and at the level of the best international standard. There has been a clear evolution of the CGR research programs to focus on extreme environments and unique Chilean genetic resources. There has also been a clear evolution from the earlier days of the CGR to focus on complex genomes. This latter evolution has developed in parallel with high throughput sequencing technologies which the CGR has embraced. This evolution of the CGR has been important in developing genomic research in Chile at the highest international level.

The focus on extreme environments and unique Chilean genetic resources is also very appropriate and has the potential for greater international recognition of certain biomes of Chile as unique natural laboratories. One project makes the case that some of the extreme environments in Chile may foreshadow the extreme environments that may become more

commonplace in the next 50-100 years. The CGR should begin to publicize this opportunity and encourage sabbatical visitors to Chile in order to expand the impact of the CGR.

Training/Education: The list of students and postdoctoral associates associated with the CGR is impressive by any standard. Importantly, the Center sponsors a regular seminar series and retreat to bring this group together on a regular basis. A major value of the CGR is to expose students to a range of disciplines represented by the Center faculty but this does not appear to be happening in a systematic way. Some attention is critically needed to increase communication across PI laboratories within the CGR. Some postdocs felt isolated from the broader Center and were not benefitting from the potential for interdisciplinary synergy.

Outreach: The CGR is seeking to communicate the impact of genomic research and CGR results to the public. This is important and should be strengthened especially as the CGR seeks to establish more stable funding.