



**Millennium
Science
Initiative**

ANNUAL REPORT

PEER REVIEWERS' EVALUATION FORM

2023

EVALUATION FORM

CENTER DIRECTOR'S LAST NAME	Miguel L. Allende Connelly
NAME OF THE INSTITUTE OR NUCLEUS	Millenium Institute Center for Genome Regulation
REVIEWER'S LAST NAME	
PERIOD EVALUATED	2023

INSTRUCTIONS

After reading the report, please evaluate each section using the following grading scale:

- **Outstanding**
- **Very Good**
- **Good**
- **Fair but requires important improvements**
- **Noncompetitive**

Include brief comments for each criterion and fill-in only the spaces in **light blue**.

COMPONENT 1: ADVANCED SCIENTIFIC/TECHNOLOGICAL RESEARCH

COMPONENT EVALUATION GUIDELINES

Evaluate the scientific, technical, and methodological achievements of the center, in terms of the academic excellence or impact of the work developed as well as its quantity or productivity. Assess the level of fulfillment of the goals established during the center's existence, expressed through verifiable products, such as: scientific publications in high impact indexed journals or other relevant works that reflect the research and/or development with national and international recognition, either by its quality, productivity and/or leadership in its area of expertise. The following aspects should also be considered and positively valued:

- Multi, transdisciplinary and associative work among Associate Researchers and other participants of the Institute or Nucleus.
- Results and impact of products obtained in terms of relevance for the country and the world or the delivery of some other type of contribution to society.

If applicable, consider the center's plans in terms of the capacity to carry-out the research successfully and with high standards of scientific quality, as well as to generate relevant scientific works and excellence in the area of work. In particular, consider the work plan approach, the team formed to deal with it, and the coherence of them with respect to the objectives and goals. Also consider on that the organizational structure and integrated management capacity of the Institute or Nucleus

GRADE:

Overall: **Very Good**

**Outstanding
Good**

with respect to scientific quality, productivity and impact
with respect to creating added value

SUB-COMPONENT 1.1: Evaluate the **coherence** between the central objectives of the center and its direction, actions, and methodologies.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

Overall, the Center is doing fine. The coherence in the objectives of the Center is reasonable, but it is not yet developed to the full and therefore also not sufficiently represented enough in the results produced and published by the Center. Coherence and overall direction of the projects pursued by the groups involved in the Center should be aligned further. Much of the ongoing activities could be adapted or modified so as to contribute even more to a common theme, thereby producing more added value. A common theme could be an analysis of the interaction of biological systems in an extreme environment and the transfer of the gained knowledge toward conservation, ecosystem health and sustainable food production. This would link the

three main research lines. It would require more interaction between the groups and direction of the different projects so as to really complement and supplement each other.

An off the hook example – and just a suggestion – could be an investigation about how some of the collected bacteria or meta-genome “organisms” would form interactions that benefit other organisms, in particular plants, and how the knowledge about these processes could be transferred to a better, more productive and more sustainable food production in areas with party extreme conditions. However, it should be up to the Center's scientists to come up with an interesting common theme.

Such direction of ongoing activities toward an even more collaborative effort around a main theme objective has not yet been achieved to the extent that one could expect. The Center's activities do not need to focus on one topic only, but contributions of the individual projects to a common theme should be clearly visible. Only then the Center will reach its full potential and become much more than funding provided to individual, excellent scientific projects.

SUB-COMPONENT 1.2: Comment on the **advances in the Center's research lines**, and of the Center as a whole (*achievements, impact, cutting-edge research, and others*).

COMMENTS: The **research lines** (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The scientific advances of the Center and its impact are great. However, in the report there is little information about how this will extend into the future and produce eventually results that link the three research lines. While the scientists' track record implies a successful continuation of scientific and in consequence societally important output, better definition of a thematic direction would be useful and improve productivity and impact even further.

SUB-COMPONENT 1.3: Comment on the **collaborative and interdisciplinary work** between the Center's researchers. In particular, evaluate the collaboration between researchers from different research lines at the Center.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

There was a noticeable increase in collaborative publications compared to last year. Given the fact that the Center was in only its second year in 2023 and that it takes a while until collaborative work translates into collaborative publications, the Center is on a very good way. The Center should keep up this direction and foster collaboration and interaction between groups. Focusing on a common theme would certainly be one factor that could drive such a process forward.

SUB-COMPONENT 1.4: Evaluate the **Center's productivity** taking into account the following parameters:

- Publications (*level and quantity (by subject) and their possible impact; ISI publications or equivalent, Scopus or equivalent, SCIELO or equivalent (depending on the discipline) and other publications such as books or book chapters.*)
- Presentations at Congresses/Seminars and others
- Innovation and intellectual property resulting from the research.
- Researchers participating in ISI journal editorial committees or equivalent.
- Resources and funds obtained from the private sector
- Scientific awards
- Others relevant in your discipline

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The Center's scientists have been very productive indeed. This clearly indicates the value of MI CGR. They have published very well both in numbers and the achieved impact. The current level should be the benchmark on which future work should orient itself. The Center's scientists should continue aiming high impact, as they already do.

One wonders a bit about patenting. Given that the Center has interactions with companies and industry and given that the three research lines are something that companies should be interested in, one would expect that this aspect is on the scientists' mind and actively pursued. Not always is interesting work patentable. However, the scientists should keep patenting in mind and go for it, when a result shows promise. This does not mean necessarily that the Center itself has to do the patenting. They could pass on the information to an industrial partner who is then going for it. However, the Center should get a fair share of any potential revenues.

COMPONENT 1 FINAL COMMENTS: Enter general comments and/or suggestions to the Center regarding **Component 1: Advanced scientific/technological research.**

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

Overall, science and productivity are at a very high level. The Center is doing fine. This path could nevertheless be improved further still by focusing the various projects more in terms of contributing different kinds and forms of information around a common theme that one would associate with the Center. It is up the Center's scientists to decide of how they would direct their research.

This increased focus could also be used to define a highlight-project within the scope of projects. Several groups within CGR should contribute. Also, it should deal with something novel, which optimally could have an impact beyond basic science. Furthermore, it should probably be designed to last several years, although this reviewer is aware of the need to publish regularly. With interesting results on a project of such scope and degree of novelty, this collaborative work should aim at publication in a scientific journal with an impact factor of 15 or higher.

COMPONENT 2: TRAINING OF YOUNG RESEARCHERS

COMPONENT EVALUATION GUIDELINES

This section should be evaluated considering the **Center's achievements in the training of young scientists and advanced human capital** as well as the plans implemented for the development (or leadership) of research lines by young researchers. In terms of advanced human capital, the number of postgraduate and undergraduate students in training and graduates, as well as the number of postdoctoral participants in the work of the Institute or Nucleus should be considered.

Also, consider the **plans and potential for the training of young scientists and advancing human capital**. Evaluate the plans for the development of lines of investigation led by young researchers. The strategy to formally incorporate them into this, or any other institution, should also be assessed. In terms of advancing human capital, consider the number of undergraduate and graduate students in training, as well as the number of postdoctoral researchers expected to work for the Institute or Nucleus. Plans with gender equity, should be positive considered.

GRADE: Outstanding

SUB-COMPONENT 2.1: Comment on the **Center's students**, considering the following:

- Quantity and quality of students (*undergraduate, MSc, PhD*) and of postdocs with tutors belonging to the Center.
- Number of young people graduated during the period.
- Gender representation among the students

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The Center does a great job concerning student education and training. Numbers are high and students are involved in various activities and areas of expertise. Also, they co-author a substantial number of publications. A high percentage of the students are women.

Also, as compared to last year, the number of PhD students, who completed their theses has tripled. This very good news indeed. Given the current number of students, one would expect that a similar number will be graduating in future years, also.

In 2023, basically all groups involved in MI CGR supervised PhD students. This is a clear improvement to the record of 2022. The Center is clearly aiming at and active in providing education and training across its participant institutions and groups.

SUB-COMPONENT 2.2: Evaluate the **number/type/quality of the publications** of the associate, junior or senior researchers, that are coauthored by Center's students.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The Center has responded very well to last year's comment about the then low number of students that were authors on the Center's publications. The number has increased substantially in 2023. This positive development should be kept up.

SUB-COMPONENT 2.3: Insert comments regarding the participation of the Center (or of the Center's researchers) in **formal training programs**, at different levels, for young scientist.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The Center does an excellent job in educating students and young scientists. This reviewer is very pleased about the engagement in this important facet of the Center's activities.

COMPONENT 2 FINAL COMMENTS: Enter general comments and/or suggestions to the Center regarding **Component 2: Training of young researchers**.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The training aspect is covered very well indeed.

COMPONENT 3: NETWORKING

COMPONENT EVALUATION GUIDELINES

Assess this component taking into consideration the achievements and plans in the development of **networking and fundraising activities**. In particular, consider the following:

- Develop and strengthening of networks. Work between scientists from the Center and researchers from other institutions, both national and foreign, on equal terms (*i.e. a relation based not only on providing students to other institutions*).
- The search for and acquisition of complementary financing sources, whether public or private.

GRADE: **Outstanding**

SUB-COMPONENT 3.1: Comment on the participation of the Center's research teams in **formal national and/or international networks**, already established or in the process of being established. Evaluate their quantity, quality and if they involve additional funding for the research lines.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

Participation in national and international networks is excellent. As a matter of fact, it has improved even beyond the already very high standard achieved in 2022. The activities fit to the projects pursued in the Center and will contribute to their success. From the track record, one can expect that interaction will remain at this very high level or possibly become even better.

SUB-COMPONENT 3.2: Appraise the **relevance, projection and achievements of the networks** established, or in the process of being established, by the Center.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

This is not an accidental repetition of the text from above. Copy-pasting was done intentionally.

Participation in national and international networks is excellent. As a matter of fact, it has improved even beyond the already very high standard achieved in 2022. The activities fit to the projects pursued in the Center and will contribute to their success. From the track record, one can expect that interaction will remain at this very high level or possibly become even better.

SUB-COMPONENT 3.3: Comment on the participation of the Center in **other collaborative activities**. Evaluate their quantity, quality, and achievements.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The other interactions are fine, too. One would expect, however, that particularly the interaction with industry will become stronger. Pro-active activities of the Center should be taken to improve or form new connections between the Center and companies with related interests.

COMPONENT 3 FINAL COMMENTS: Enter general comments and/or suggestions to the Center regarding **Component 3: Networks**.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The MI CGR is doing fine with interaction nationally and internationally. It should seek to continue this on the basis of the existing interactions. There is room for improvement concerning interaction with industry and translation of the Center's results.

COMPONENT 4: OUTREACH

COMPONENT EVALUATION GUIDELINES

Comment on the achievements, and proposed plans, for the Center's **technological and knowledge transfer, scientific diffusion, and outreach**. Although you may not have a detailed understanding of the context or of the Chilean culture, consider the Center's outreach strategy in terms of the coherence between it and the objectives set by the Center. If possible, refer to the pertinence of the applied methodologies. Plans that have an innovative and high impact profile should be highly valued.

GRADE: **Very good**

SUB-COMPONENT 4.1: Comment on the **outreach activities** carried out by the Center. Albeit you may not have a detailed understanding of the context or culture, give your opinion regarding the quantity, quality, relevance, projection, and achievements of these outreach activities.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

The outreach activities are excellent. Nevertheless, the Center should aim at even more activities across the country. While more large activities might distract the scientists from pursuing science, they should try to additionally implement smaller activities that do not take up much time but in combination may reach more people than the big activities, which should be kept up, however. For example, if each of the Center's PIs and postdocs would visit school classes twice a year in order to talk about science overall and the MI CGR activities in particular, this could have a large impact.

SUB-COMPONENT 4.2: Taking into consideration the connections with the **productive and service sectors** (*public or private*), **education sector, and with the community in general**, comment on: joint ventures, development projects and other similar initiatives. Assess quantity, quality, relevance, projection, and achievements of these connections.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

See comments to sub-component 4.1. There is nothing more to be added.

COMPONENT 4 FINAL COMMENTS: Enter general comments and/or suggestions to the Center regarding **Component 4: Outreach**.

COMMENTS: (enter any type of pertinent comment you may have; try to be as detailed as possible; no character limit)

Outreach is fine. More small-scale activities and a broader distribution of such events across the country could improve outreach even further.

General Comments

Finally, enter general comments, suggestions, and recommendations about this Millennium Center.

Weaknesses: (detailed explanation required; no character limit)

The MI CGR is a strong activity; there are no real weaknesses. Still, there is room for improvement at various levels, of course, as outlined in detail in the above paragraphs. In particular focusing on a common scientific theme would foster the Center's quality even further. Given the Center's track record during its initial two years, one would expect that it will become an even better and closer group of scientists with a common goal.

Strengths: (detailed explanation required; no character limit)

The center is a very good partnership with a sound basis. The research lines complement each other nicely and will produce added value by interaction between them.

Final comments: (detailed explanation required; no character limit)

An excellent activity!

With several years to go, it will develop further as a Center and improve beyond the already high standard. One can expect this to happen during the entire course of the funding period. The true impact, future direction and long-term potential should be visible after year 3, which is a bit more than half through the initial funding period of five years.

Approval of the Annual Report (Required Section)

Based on your knowledge and the evaluation performed, considering all the above criteria, we kindly ask you to classify: (Please justify only failed reports.)

Annual Report Approved

X

Annual Report Observed