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## TRAINING OF SCIENTIFIC DISSEMINATORS, FROM AND FOR THE NORTH OF CHILE

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Scientific dissemination allows an approach to understand our environment and although this has been progressively increasing, it has not yet managed to consolidate among citizens (Cortassa, 2018). If so, society's response, in the current pandemic scenario, would have been more efficient and adequate, which reveals a scientific culture that has not yet been strengthened.

The Antofagasta Region, located in northern Chile, is an area characterized by the presence of the Atacama Desert and by a large number of natural laboratories, which allow the development of a broad scientific endeavor, highlighting activities related to astronomy, mining, marine sciences and extremophile organisms, among others. Although there is interest on the part of the scientific community to develop dissemination initiatives, these have been concentrated mainly in the school segment and through expository talks, that is, there is a need for these professionals to have tools that allow them to communicate science to different audiences and through different formats that facilitate the understanding and effectiveness of the messages in the different communities.

Based on this need, as a Science, Technology and Society, C-TyS team of the "Universidad de Antofagasta", we set ourselves the challenge of generating a permanent training program, with the aim of providing tools for the effective communication of science to professionals of areas related to science, education and communications, through the design and implementation of the Diploma in Scientific Dissemination. This initiative has a duration of 147 chronological hours in 9 months of work and has the support of the Continuing Education Center (CEC) in "Universidad de Antofagasta".

The program is currently running in its third version and consists of 3 main modules:

1) *Module I – Scientific Communication:*

Here the local, national and international scenario in relation to scientific development is made known, highlighting main milestones and introducing elements related to how to communicate science, also incorporating units related to accessibility, inclusion and creativity.

2) *Module II – Development of Scientific Dissemination Products:* In this module, students learn about 4 areas from which they can generate dissemination products (performing arts, illustration, literary and audiovisual creation). Based on their interests and the content they want to work with, they develop a product, which can be directed at general or specific audiences and must incorporate accessibility elements.

3) *Módulo III – Dissemination of Products and Linkage with the Community:* Tools related to effective communication are delivered for the presentation of products, they are presented in front of different communities (schools, the general public, the elderly, among others) and knowledge transfer is carried out to professionals from educational establishments in different communes of the region.

This project was initially financed by the Innovation Fund for Regional Competitiveness (FIC-R) of the Regional Government of Antofagasta, developed between 2021-2022 and considered two cohorts of students for each year of execution. The first two generations were made up, respectively, of 26 and 25 participants from different areas of science, communications and education, coming from 3 communes in the region (Tocopilla, Calama and Antofagasta). The academic body that is maintained until now, is made up of 16 professionals from different areas related to each subject and where

talks are also held with leading national and international scientific communicators, who complement the contents of the curriculum.

The original design of the diploma course was proposed and designed as a face-to-face training program, therefore, for its execution during the health contingency, it had to be adapted to a virtual modality (Fig. 1). This situation also presented some advantages, such as the possibility that students could learn about the work done by their colleagues from other areas and incorporate these elements into their own work. Since the second year, because the health authority allowed some face-to-face activities to be carried out, sessions have gradually been carried out in this modality, taking the necessary safeguards (Fig. 2).

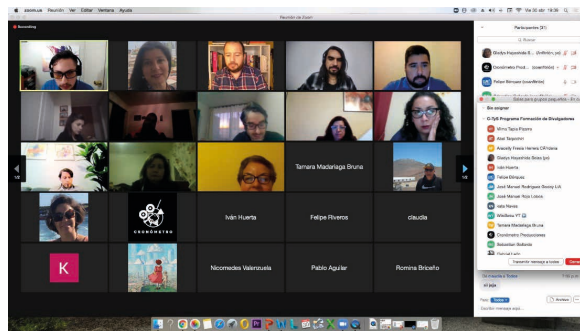


Fig. 1.- Session in online format, corresponding to the conversation with disseminators, in which Dr. Gabriel León and Sebastián Rojas (WikiSeba) participated.



Fig. 2.- Face-to-face illustration workshop with the teacher, Dr. Alexa Garín-Fernández.

During the execution of the first and second versions of the diploma, the

participants have designed audiovisual products (scientific capsules, *tiktok* and *instagram reels*, among others), works with illustrations (infographics, card and board games), stories, blogs and literary stories about caring for the environment, mental health and physical phenomena and 2 monologues that incorporate elements of performing arts.

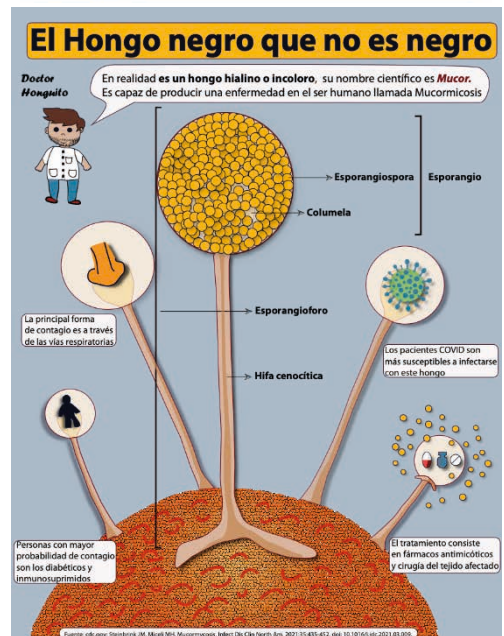
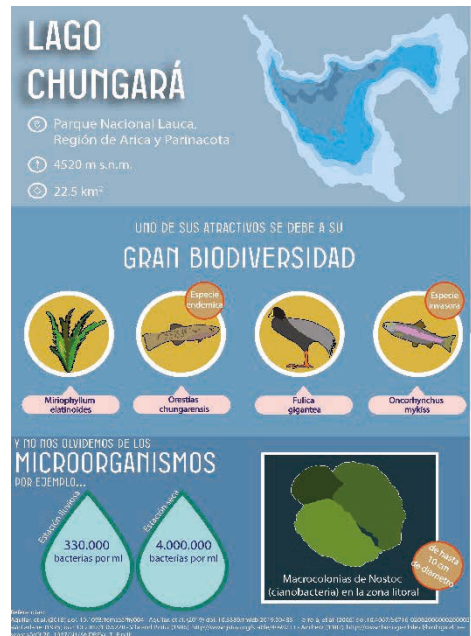


Fig. 3 – Chungara Lake infographic Fig. 4 – Black Fungus Infographic



Fig.5 – Mother Earth Monologue

In the last stage of the diploma course, students present their creations to the educational community, transferring knowledge to support science teaching in the classroom. In addition, presentations are made to the community in general, interacting with the public, such as exhibitions and thematic conversations. This way, citizens are also benefited, accessing scientific content in an interactive and inclusive way.



Fig. 6 and 7 – Presentation in Calama Board Game “Transfórmate al Verde” (Sustainable Chemistry).

Among the actions of the implementation of the diploma, three evaluative instances are contemplated (initial, intermediate and final) with the objective of verifying the fulfillment of the objectives of the program, the incorporation of the learning of the different modules and the projection in relation to carrying out activities. of scientific dissemination.

The results, to date, indicate a high valuation of the different actions of the diploma, especially the relevance and importance of scientific dissemination as an essential activity to bring content and advances in science to the entire community and the positioning of this as a necessary activity for democratize access to content. Also noteworthy, regarding this last point, is the positive response of the participants to generating scientific dissemination products that have different elements of cognitive accessibility, aiming to reach audiences that generally do not receive this content, making different adaptations that facilitate their understanding.

On the other hand, one of the objectives of the diploma is for the participants to learn how to communicate science and diversify the formats in which this activity is carried out. The results to date also present a high assessment and learning about how the areas of illustration, audiovisual, literary creation and performing arts, allow them to expand the possibilities to reach different audiences with different products and not focusing only on talks, which is what usual. This is very relevant if one considers that most of the participants are researchers and academics from different scientific fields, very prominent in their areas, but not necessarily with the knowledge to disseminate their results.

It is important to note that this Diploma in Scientific Dissemination is the first of its kind in the northern macro zone of Chile and the second at the national level, after the

Diploma in Scientific Communication from “Universidad de Chile”.

Science continues to advance and communicate it effectively, contributes to the development of an educated, active and critical society in the face of available information and demanding needs at a local and/or national level.

## REFERENCES

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