STIC Special Issue - Supporting Our People During COVID-19

Global challenges demand global responses. Since the outbreak of the COVID-19 pandemic, the coordination of international and domestic actions has become a fundamental pillar for the effective and timely responses that are critical to success. Science, technology, and innovation have quickly become the main drivers to identify sustainable solutions. Governments, policy-makers, companies, academia, and civil society have all been called on to collaborate and deliver solutions to the challenges imposed by the pandemic. In this issue of the newsletter, we highlight actions that members of the U.S. - Chile Science, Technology, and Innovation Council (STIC) are taking to combat the virus. These efforts involve significant donations, R&D, and innovative collaboration, reflecting a commitment to lead the call for action to learn more about the virus, reduce its transmission, and mitigate the social and economic consequences of the pandemic.

STIC Executive Committee

Newsletter

United States Embassy
Santiago, Chile

Santiago
Chile
AUGUST
2020

COUNCIL
United States ★ Chile
on science, technology and innovation

U.S. Government and Private Sector Humanitarian Assistance During COVID-19

US$60,000 in refugee/IOM/UNICEF funds

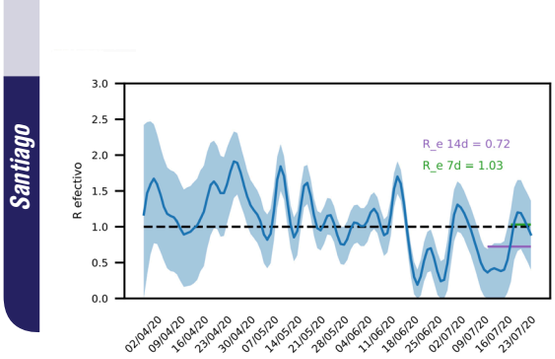
US$715,000 in Humanitarian Assistance Program projects including the announcement of funding for two field hospitals.

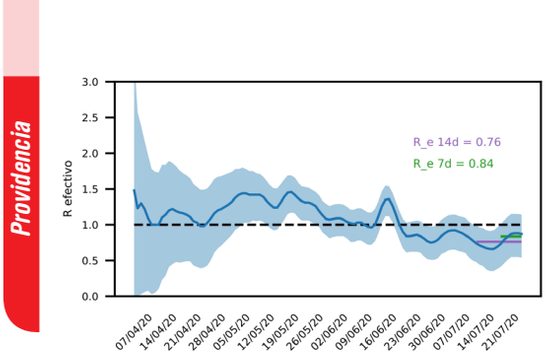
US$57,000 in **USAID Bureau of Humanitarian Assistance Projects** (PPE, cleaning supplies, ozone cannons used to clean firefighting equipment.

US$500,000 grant by the Air Force Office for Scientific Research to Fundación Ciencia y Vida for scientific research and modeling of the spread of the virus.

Announcement of funding for 8 mechanical ventilators valued at US$200,000 through the Humanitarian Assistance Program.

More than US$1.72 million in donations from U.S. companies (personal protective equipment (PPE), food, cleaning supplies, software, vehicles).





Data Management for Policy Making

The Ministry of Science, Technology, Knowledge, and Innovation of Chile, along with other Chilean government ministries and institutions, are taking actions in response to the COVID-19 pandemic. The Ministry convened a COVID-19 Data Working Group to make available data for predictive, scientific, and clinical pandemic analysis. The Data Working Group highlights the relevance for data-sharing that is frequent, anonymized, and available more openly in order to build stronger mathematical models of the pandemic and its effects. We are learning these models need to be adaptive, as our knowledge improves over time about the virus that causes COVID-19 and its manner of transmission. The Ministry leads conversations with international laboratories and pharmaceutical firms, including from the United States, that are developing a vaccine for SARS-Cov2 to implement clinical trials and joint research in Chile. It is noteworthy that agencies such as CORFO, which organized the COVID-19 Innovation Challenge, are seeking innovative approaches combatting the pandemic.

Collaboration to Improve Covid-19 Models

Biodata scientist, Tomás Pérez-Acle from Fundacion Ciencia y Vida, the Centro Interdisciplinario de Neurociencias de Valparaíso and the U.S. Air Force Research Laboratory joined together to advance the development of models to better understand the spread of coronavirus and to provide tools to project the impact of COVID-19 on health system. The U.S. Air Force Office of Scientific Research provided a US$498,000 grant to support this effort. The U.S. funding allowed Pérez-Acle to apply modern probability techniques on top of classic epidemic models like SEIR (Susceptible – Exposed – Infectious – Recovered). This cooperative agreement provides mutually beneficial scientific collaboration for Chile and the United States. The project is an opportunity for substantial improvements to be made to the enhanced SEIR model, and contributes to high powered computing, artificial intelligence enhancements, and makes a crucial use case by evaluating the model using data from the state of New York.

Mechanical Ventilators: Innovation and Collaboration Between Countries

When the COVID-19 pandemic threatened the capacity of public and private health systems globally, the Massachusetts Institute of Technology (MIT) released its designs for a low-cost emergency mechanical ventilator. Towards the end of March 2020, the Latin America Office of MIT Sloan School of Management, Chilean MIT alumni, the U.S. Embassy, the Chilean government, and LATAM airlines collaborated to bring MIT-designed emergency ventilators from New York to Chile. Locally produced and manufactured ventilators based on the MIT open source design have been validated by Chilean public health institutions.

"I would like to believe that the COVID-19 pandemic has emphasized the need for increased collaboration between academia, and the private and the public sectors to solve the major problems facing humanity. For the current pandemic it has been key for innovations that take us from design to production in a relatively short period of time to help meet the health needs of the world," states Lee Ullmann, Senior Director of the Latin America Office of MIT Sloan School of Management. "This can only happen when you have innovators who receive support and assistance from government officials and private companies," he adds.

International Networking Among Countries is Key

The Department of Energy, Science and Technology and Innovation (DECYTI) of the Ministry of Public Relations (MINREL) is gathering information about measures taken in other countries based on scientific evidence to combat COVID-19. MINREL promotes the participation of the Chilean government in international meetings with scientific-technological components that will fight against COVID-19. These efforts are complemented by various aspects of Chile's COVID-19 National Vaccine Strategy.

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"SiEmpre por Chile"

Initiative

The "SiEmpre por Chile" initiative, developed and led by SOFOFA, created a food box delivery coordination system, with the goal to reach at least 125,000 families in the most vulnerable segments of the population. The Ministry of Social Development coordinated this effort with civil society. The joint initiative of SOFOFA Hub, the Ministry of Science, and the IDB, started to identify, evaluate and support innovative national and global solutions in two areas: medical devices, and diagnosis, treatment and vaccine development. This effort includes financing for a ventilator prototype and the experimental project "Compassionate Investigative Treatment" of the Arturo López Pérez Foundation.

Virtual Public Programming Brings People Together During Pandemic

In the current climate, online activities and conferences bring people together, encourage connections and collaborations, not only on COVID-19 topics, but on themes relevant to society after the pandemic.

An example is State Alumni Chile. An organization of Chilean alumni of U.S. Department of State-funded educational and professional exchanges, the Chilean North American Institute of Culture (ICHN), IANAmericas (Inter-American Network of Alumni Associations), and American Corners Chile (an Embassy Santiago program in alliance with six Chilean universities) organized a cycle of five virtual conversations with female leaders in Science, Technology, Engineering, Arts, and Mathematics (STEAM) called "STEAM Girls: Future, Empowerment and Economic Development".

"Integrating the vision of women in all spaces of public discussion (political, scientific, social, economic) and putting them at the center of these will not only hasten post-pandemic recovery, but will also contribute to advancing Chile's more sustainable development," states Marcela Ruiz A., an International Visitor Leadership Program (IVLP) alumni and Vice President of State Alumni Chile.

Greater Testing Capacity

According to Pilar Parada, General Manager of Fraunhofer Chile Research, the response to the pandemic is driving a new sense of scientific rigor and timing: "We have seen that in a matter of days, much useful data has been made available to the scientific community to advance the understanding of the disease. Obviously we need to find a new balance in which we adopt this current efficiency, but without losing rigor in the confirmation and analysis of data. In the future, the role of national and international scientific collaboration networks will be fundamental to advancing research and the development of solutions to global problems more quickly and efficiently."

Fraunhofer Chile unveiled their Molecular Biology teams effort to help combat Covid-19. At an international level the company is presenting a project financed by the German "Fraunhofer vs Coronavirus" program, aimed at designing a new, faster, and less expensive way of detecting the Coronavirus through a P-o-C device.

Science Diplomacy Speaker Series

The Science Diplomacy Speaker Series, a STIC Executive Committee Priority Initiatives for 2020, is a series of monthly seminars that began in June. Dr. E. William Colglazier kicked off the series with a seminar titled: "Science Diplomacy and the Global Response to the COVID-19 Pandemic." Dr. Sonia Ortega, National Science Foundation and Embassy Santiago Science Fellow, led the session at the end of July. Planning for our next seminar is currently underway!

EL CONSEJO PARA LA CIENCIA, TECNOLOGÍA E INNOVACIÓN ENTRE CHILE Y LOS EE. UU. INVITAN A LA PRÓXIMA SESIÓN DE SU SERIE DE ORADORES SOBRE DIPLOMACIA CIENTÍFICA

PROMOCIÓN DE LA COOPERACIÓN CIENTÍFICA INTERNACIONAL Y SU IMPLEMENTACIÓN EN CHILE