First in Flight…on Mars!

On April 19, 2021, NASA’s Ingenuity Mars Helicopter became the first aircraft in history to make a powered, controlled flight on another planet. Altimeter data indicate Ingenuity climbed to 10 feet (3 meters) and maintained a stable hover for 30 seconds. It then descended, touching back down on the surface of Mars after logging a total of 39.1 seconds of flight. A true milestone!

Giant Magellan Telescope Update:

The Giant Magellan Telescope (GMT), located in Cerro Las Campanas in Chile’s Atacama Desert, will be a next generation giant ground-based telescope that promises to revolutionize our view and understanding of the universe. One of the most sophisticated aspects of the telescope is what is known as “adaptive optics,” which allows for constant adjustment of the flexible mirrors to counteract atmospheric turbulence to deliver much clearer views of the universe. Scientists hope that this ground-breaking technology will bring us closer to answering the age-old question: is there life on distant planets orbiting other stars?

SPACE CORNER

James Webb Space Telescope Launch:

Planned for October 2021, the launch of the James Webb Space Telescope (JWST) will complement and extend the discoveries made by the Hubble Space Telescope, and will provide a giant leap forward in the quest to understand the Universe and our origins. JWST will examine every phase of cosmic history: from the first luminous glows after the Big Bang to the formation of galaxies, stars, and planets to the evolution of our own solar system.

Successful Launch of the STIC-Sponsored Science Diplomacy Speaker Series

Science Diplomacy involves building constructive international partnerships to promote scientific collaboration among nations and address common problems.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines it as follows: “Science, due to its international and universal nature, has the power to cross borders and connect different peoples, communities, and societies. Science diplomacy builds on this power of science, using science as a tool to achieve foreign policy objectives where, not only the research outcomes, but also science itself as a process and way of communicating, may serve to promote peace and sustainable development.”

One STIC Executive Committee recommendation for 2020 was to promote the launch of the Science Diplomacy Speaker Series. The U.S. Embassy organized three virtual seminars featuring distinguished speakers on important scientific topics.

Want more info? Check out the American Association for the Advancement of Science’s “Science Diplomacy – An Introduction” video.

Science Diplomacy and Global Response to COVID-19

International Scientific Cooperation - Implementation in Chile

COVID-19 from an R&D Perspective

Dr. Sonia Ortega
Program Manager in the Office of International Science and Engineering (OISE) at the National Science Foundation (NSF), spoke about the promotion of scientific cooperation and its implementation in Chile.

Dr. Peter H. Kilmarx
from the Fogarty International Center at the U.S. National Institutes of Health (NIH) presented on the international cooperation in COVID-19 research and

Dr. Bill Colglazier
Editor-in-Chief of Science & Diplomacy and former Science and Technology Adviser to the Secretary of State from 2011 to 2014, focused on the evolution of the Science Diplomacy concept and its tools and mechanisms, particularly during the COVID-19 pandemic.

Jamie Bay Nishi
from Global Health Technologies Coalition (GHTC) explored means to advance health R&D during the pandemic.

All sessions featured interactive Q&A forums and we hope to continue the successful program in 2021! Recordings of the webinars are accessible online.

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Two teams emerged victorious in the Avante 2020 Challenge to develop technical solutions to a set of problems proposed by the Chilean Navy. The local Naval Polytechnic Academy through its INNOVAPOLNAV program, CORFO, and the Office of Naval Research Global provided financial support to hold the event.

Real-time information on Chile’s maritime territory is an ongoing challenge. The goal of the Avante Challenge 2020 was to stimulate creative ideas using technology to provide low-cost tools.

The Office of Naval Research (ONR) Global provided US$255,000 to support the challenge, which received additional assistance from the Chilean Naval Polytechnic Academy through its INNOVAPOLNAV program and CORFO. The 46 participating teams sought to solve one or more of the challenges posed by the Chilean Navy. Participants could address four types of problems: illegal landings on the north coast, obtaining evidence of illegal fishing in Chilean jurisdictional waters to present to judicial bodies, anomalous behaviors in ships and vessels that transit through national maritime areas, and non-collaborative ships.

On March 30, nine finalists presented their projects to an evaluation panel. The panel selected two winning teams to develop and demonstrate prototypes in five months:

First place, US$50,000 award: Acústica Marina. This team is developing a vessel detection system using hydroacoustic technology with real-time data processing in order to improve the quality of information and optimize the inspection operations of smaller vessels on the north coast of the country.

Second place, US$40,000 award: IA Grafimar. This team is automating the analysis of maritime traffic in real time, increasing the capacity of the Chilean Navy to detect illegal acts and direct search and rescue operations at sea using Artificial Intelligence.

Sonia Wolff, associate science director for ONR Global Santiago, said, “Considering all the areas of responsibility that the state of Chile has, approximately 26.5 million square kilometers, to solve this problem, a system of systems approach is needed. There is no single technological solution that can satisfy all requirements. We will be looking closely to the winning teams’ ability to design an innovative prototype that demonstrates this ability and that is likely to lead to the creation of a spin-off company and new products.”

ONR Global sponsors scientific efforts outside of the United States, working with scientists and partners worldwide to discover and advance naval capabilities.

Donations Update

Through the U.S. “All-of-America” initiative, the government of the United States has been working with partners in Chile to assist with most urgent needs of local communities and the Chilean government in response to the pandemic.

To date, the U.S. government though the Humanitarian Assistance Program (HAP) of the Department of Defense and the USAID Bureau for Humanitarian Affairs has donated approximately US$2 million in humanitarian assistance and R&D efforts.

- Two field hospitals delivered in December 2020 to the Talagante and Padre Hurtado Hospitals in the Metropolitan Region, valued at $1,085,000
- $87,000 units of personal protection equipment delivered in April 2021 to the Metropolitan Region Health Secretariat (SEREMI), valued at $147,000
- $145,000 in cleaning and hygiene supplies, personal protection items, and emergency non-perishable food boxes.
- $500,000 grant by the U.S. Air Force Office of Scientific Research to a team of Chilean researchers to develop models to study the evolution and spread of Covid-19
- $100,000 grant by the Public Affairs Section of the U.S. Embassy for programs developed by alumni of State Department programs that are related to the impact of Covid-19
- Eight Hamilton T1 ventilators delivered in January 2021 to the Undersecretariat of Healthcare Network of the Ministry of Health, valued at $132,812