CONICYT
Ministerio de Educación

Gobierno de Chile

international relations
CONICYT

> CONICYT and NSFC sign new collaboration agreement
> FP7 MIRACLES project adding value to microalgae derived products
> STIC Amsud project supporting decision making in natural disasters
> Chilean PhD fellows opening new pathways for collaboration with the UK

issue 24 /October 2014

Welcome to issue 24 of CONICYT's International Relations quarterly bulletin, with news and information for all stakeholders interested in international cooperation in science and technology with Chile.

In this issue we inform about the latest activities of CONICYT to encourage scientific and technological cooperation with Chile, including new initiatives with key partners in China and Brazil.

We also feature the MIRACLES project financed by the Seventh Framework Programme of the EU, that includes the participation of the Universidad de Antofagasta.

In our *European Connection* section, the President of the European Network of Living Labs, Jarmo Eskelinen, analyses EU-CELAC cooperation in smart cities, which is emerging globally as an important research topic.

In *Interviews*, the Director of the Chemistry Division at the U.S. National Science Foundation, Dr. Tim Patten, provides some interesting insights on his recent working visit to CONICYT organized as part of an exchange of best practices in programme management between both institutions.

In *Projects,* we include the case of RESPOND, a project funded by the STIC Amsud Regional Programme, to learn about the novel solution that a group of researchers from Chile, Argentina, Brazil and France are proposing to solve connectivity problems in natural disasters.

And in *On the Move*, Jessica Ocampos and Pablo Salas, co-founders of the Cambridge Knowledge and Technology Transfer Platform for Latin America, tell about the promising results achieved so far with this initiative.

We hope you find the content we have prepared for this issue enjoyable and informative.

Please do email us your feedback or ideas for content.

International Cooperation Programme
CONICYT

The International Cooperation Programme welcomes all comments and suggestions from readers. Please email us at relacionesinternacionales@conicyt.cl

Cover photo: MIRACLES project.

CONICYT reinforces cooperation with the Natural Science Foundation of China

CONICYT and the National Natural Science Foundation of China (NSFC), signed on August 25 a Memorandum of Understanding (MoU) to reinforce cooperation in science and technology between Chile and China.

The agreement will allow CONICYT and NSFC to coordinate financing mechanism to support joint projects between researchers from both countries. The new initiative follows the signature of agreements between CONICYT and the Ministry of Science and Technology of the People's Republic of China (MOST), the Chinese Academy of Sciences (CAS) and the Chinese Academy of Agricultural Mechanization Sciences (CAAMS).

During the ceremony held in Santiago, Dr. Minghong He, vice-president of NSFC, highlighted the leading position of Chile on the scientific and technological development of the region, stressing the significance of the agreement for the future of collaboration between the two countries.

One of the next steps following the signing of the agreement include the organization of scientific workshops in areas of common interest, the first of which will take place in 2015 in the area of seismology. Other potential areas for the organization of joint activities are renewable energies, material sciences and food processing.

Dr. Minghong He, Vice-president of NSFC.

Dr. Francisco Brieva nominated as new president of CONICYT

President Michelle Bachelet nominated Dr. Francisco Brieva to lead CONICYT.

Dr. Brieva, initially trained as an electrical engineer at the Universidad de Chile, obtained his PhD in physics from University of Oxford (1978), specializing in nuclear theory.

Dr. Brieva has developed a long and distinguished academic and teaching career at a variety of universities in Chile, particularly the Faculty of Physical Sciences and Mathematics of the Universidad de Chile, and as a visiting professor in various universities in Europe and the U.S. Dr Brieva has been a member of the Chilean Academy of Sciences since 1993 and in 1997 he was honoured as a Fellow of the Third World Academy of Sciences (TWAS). He has also served as the Director of the Chilean Nuclear Energy Commission.

Following his designation, Dr. Brieva said, "the day when all the children and young people of this country claim for more science, and when they can all practice science, then we will have won the battle. That is the reason why we are here".

Dr. Francisco Brieva, President of CONICYT.

Results of the 2014 Abate Molina Prize

CONICYT announced that the Belgian scientist Dr. Guy Brasseur will be the recipient of the 2014 Abate Molina Prize. The award recognizes leading foreign researchers or experts working outside Chile in any area of expertise, for the achievements over the course of their scientific careers. The Abate Molina Prize winners receive US$46.500 to develop a research project in collaboration with the Chilean institution who nominated them for the prize.

Dr. Brasseur is author of more than 200 indexed articles and seven books widely used in atmospheric sciences. He has also led important international scientific institutions including Max Planck Institute of Meteorology in Germany and the National Centre for Atmospheric Research in the U.S. Currently, Dr. Brasseur is the Director of the Climate Service Centre in Germany where he has contributed to build bridges between climate science and decision making.

The Abate Molina Prize will allow Dr. Brasseur to carry out a four months research visit to Chile to develop and implement, in collaboration with the Centre for Climate and Resilience Research (CR)2, a state-of-the-art system to analyse and predict air quality in South America. This work aims at addressing the impact of short-lived climate forcers, ozone and black carbon in particular, on the Andean cryosphere.

Dr. Guy Brasseur, Director of the Climate Service Centre in Germany.

Chile and Brazil express interest in renewing scientific cooperation

A delegation led by CONICYT's President, Dr. Francisco Brieva, met on September 25-26 with Brazil's senior officials in order to renew cooperation in science, technology and innovation between Chile and Brazil.

The programme of activities, organized by the Chilean Foreign Affairs Ministry within the framework of the III Bilateral Chile-Brazil meeting on cooperation in STI included a meeting with Brazil's Minister for Science, Technology and Innovation, Dr. Clelio Campolina.

During the meeting, the authorities agreed on the importance of increasing the exchange of students and academics between both countries. The President of CONICYT highlighted, "it is a top priority for both countries to modernize our relationship exploring the different mechanisms and capacities available".

The Brazilian Minister announced he will discuss with the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and A Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) mechanisms to increase mobility between universities in Chile and Brazil.

Dr. Clelio Campolina, Minister for Science, Technology and Innovation of Brazil.

CEST+I supports researchers to participate in workshop on solar energy in Seville

CONICYT announced the names of the eight researchers that will take part in the Chilean delegation at the Chile-EU Solar Energy Workshop to be held in Seville, Spain on November 11-12.

The workshop is the second of a series of similar events that the CEST+I project is organizing on key areas of EU-Chile cooperation.

The one-and-a-half day event, will bring together experts from university research centres, industry and government for a discussion focused on applied research - and the application of new solar technologies in the Chilean market.

The workshop will look in particular at how relationships between university research and private-sector technology firms are developing in Chile - and at their potential as solar power rolls out into the mainstream of the national energy mix.

Full list of selected researchers

CEST+I is a bilateral project financed by the Seventh Framework Programme of the EU to promote science, technology and innovation cooperation between Europe and Chile.

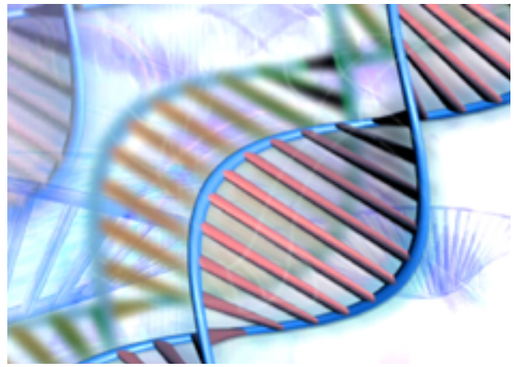
H2020 info day for SMEs in Chile

CONICYT and the Eurochile Business Foundation organized on September 9 an info day on Horizon 2020 opportunities for SMEs in Chile.

H2020 was launched in December 2013 with a budget of nearly 80 billion Euros to finance science and industrial innovation in Europe. The programme actively supports SMEs through different financing mechanisms open to the participation of organizations from third countries, including Chile.

The info day was designed to provide participants the opportunity to learn about the financing opportunities that H2020 offers to Chilean SMEs interested in collaborating with European partners in research and industrial innovation projects. One of the opportunities described during the event was the Marie Skodowska-Curie Research and Innovation Staff Exchange (RISE) scheme, which supports international collaboration through 1-12 months exchanges of research and innovation groups. The scheme includes academic and industrial organizations, SMEs in particular, in and outside Europe.

The Eurochile Business Foundation, in its role as H2020 National Contact Point (NCP) for SMEs in Chile and a member of the Enterprise Europe Network, presented the tools that SMEs in Chile can use to identify partners in Europe and access information and support to apply for funding. The info day also included presentations about practical cases of participation of SMEs in research projects financed by the European Commission, providing advice about how to best develop proposals from Chile.



ERANet-LAC joint call opens

In the framework of the ERANet-LAC project, CONICYT launched in Chile the first joint call on research and innovation with the aim to support new, sustainable and multilateral research cooperation between researchers from Europe, Latin America and the Caribbean countries.

In Chile, the call will fund basic and applied research projects designed to produce new knowledge through scientific research. Projects can also request funding for mobility, networking and access to equipment.

Applications must be submitted by a partnership of institutions including at least four eligible partners from four different countries with at least two countries from each region. The consortium may not exceed a maximum of two partners per country.

In order to facilitate the identification of partner institutions the ERANet-LAC project has implemented a Partner Search Tool. Applicants who are looking for partner institutions are asked to send their search request to: jointcall@eranet-lac.eu. All requests will be published on the ERANet-LAC's website immediately.

The closing date for applications is November 27.

More information
http://eranet-lac.eu/Joint_Calls.php

AlCUE NET Latin American ICT Technology Platforms Meeting

The ALCUE NET Latin American ICT Technology Platforms Meeting was held in Guadalajara, Mexico on October -1st to establish a joint Technology Platform for Latin America.

The meeting, held in the framework of the World Congress on Information Technology, was organized by CONICYT in collaboration with the CONECTA 2020 project, which has helped to implement technology platforms in Peru, Uruguay and Costa Rica.

The activity brought together the partners of the ALCUE NET and CONECTA 2020 projects, representatives of the technology platforms in Argentina, Brazil, Chile, Colombia, Mexico, Costa Rica, Uruguay and Peru, and other stakeholders. The participants defined the mechanisms to implement a joint Technology Platform for Latin America and participate next year in the meeting that ALCUE NET is organizing to encourage cooperation between Latin American and European technology platforms.

ICT Technology Platforms are networks for scientific-technological cooperation between academia, government and industry towards the implementation of common research and innovation agendas.

CASE STUDY

Adding value to microalgae derived products with new biorefinery technologies

MIRACLES is an industry driven R&D and innovation project that involves the participation of 25 partners from Europe, and the Universidad de Antofagasta from Chile, to develop new biorefinery technologies for industrial production of high added-value products derived from microalgae. Supported by the European Union's Seventh Framework Programme (FP7), the project stands out for its comprehensive and integrated multidisciplinary approach and the strong partnership between the participants.

In spite of the considerable potential of microalgae as a feedstock for the production of chemicals and fuels, large-scale implementation of microalgae biotechnology and biorefinery remains limited. The major reasons for this include high production costs and lack of appropriate biorefinery technologies.

The MIRACLES project, explains Dr. Hans Reith from Wageningen University (Netherlands), and the project coordinator, aims to overcome these obstacles by developing "integrated, multiple-product biorefinery technology for valuable specialties from algae for application in food, aquaculture feeds and non-food products".

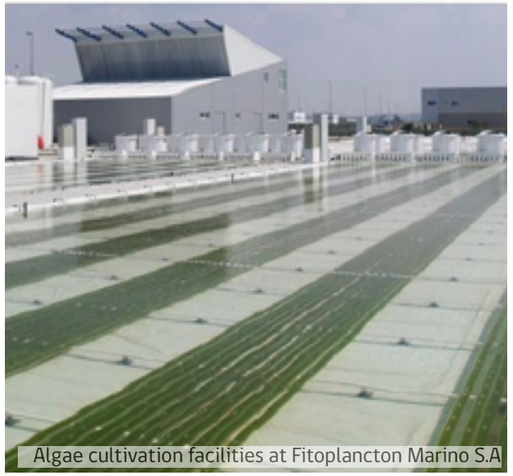
The project is designed to address in four years the entire value chain, from cultivation through product development and application, combining the expertise of leading research institutions, multinational end user companies world-leaders in the target markets, and SMEs, which are active in algae cultivation, technology and product development as well as business development.

According to Dr. Reith, the project is focused on the development and integration of highly innovative mild disruption and environmentally friendly technologies to produce specialty products from a number of established industrial algae strains cultivated by the project partners. The project is also to contribute to substantially reduce the costs associated to algae production by developing

Atacama Salt lake Bioprospection

CASE STUDY

Dr. Mariella Rivas



Algae cultivation facilities at Fitoplancton Marino S.A

innovative photobioreactor and harvesting technology; and to enable cultivation in areas with limited potential for agriculture by selecting new, robust and valuable algae production strains in extreme locations. In order to support this work, the consortium's activities include market, techno-economic and sustainability assessments, integral biorefinery designs, and the development of business plans.

New species from the Atacama Desert

The Universidad de Antofagasta became part of the consortium following a scientific mission by European experts in the field of algae biorefineries organized by CONICYT in 2012. The mission encouraged scientific and technological cooperation between Chilean and European researchers, particularly towards developing joint proposals for the FP7-KBBE-2013 call on CO2 algae biorefinery.

Dr. María Barbosa from Wageningen University was one of the European researchers who took part in the scientific mission to Chile. According to Dr. Barbosa, the motivation to invite their Chilean partners to participate in the MIRACLES project includes their "in-depth expertise and research capabilities, as well as the laboratory and pilot scale facilities available. Additionally, local conditions including availability of seawater, large amounts of sun light and desert area, where no agricultural crops can be grown, make for a highly suitable location for algae cultivation", says Dr. Barbosa.

THE UNIVERSIDAD DE ANTOFAGASTA BECAME PART OF THE CONSORTIUM FOLLOWING A SCIENTIFIC MISSION BY EUROPEAN RESEARCHERS TO CHILE ORGANIZED BY CONICYT IN 2012.

CEST+I

CASE STUDY

The Chilean group's role in the project involves bioprospecting species from the Atacama Desert, salt lakes, altiplanic lagoons, and the coastal zone of the Antofagasta region. Dr. Mariella Rivas, who leads the Chilean team of the MIRACLES project, explains that within the framework of the project bioprospecting comprises "taking microalgaes from extreme locations and finding out whether they are able to grow under specific cultivation conditions that allow for the development of large-scale biomass production. The idea is that the companies involved in the project can produce new species of microalgae obtaining high-value bioactive compounds".

Other partners working closely with the research group of Universidad de Antofagasta are the Spanish Bank of Algae of the University of Las Palmas de Gran Canaria and the University of Bergen in Norway, which are bioprospecting new species in subtropical and Nordic climate conditions, respectively.

The results obtained by the three research groups will be used to compare performance of the same species under different climates, but similar cultivation conditions.

Since the project began in November 2013, the Chilean research group has isolated new microalgaes species and made progress in determining the most adequate method to identify compounds. "At the moment, we have methods to characterize proteins, fatty acids, antioxidants and anti-cancer compounds. We

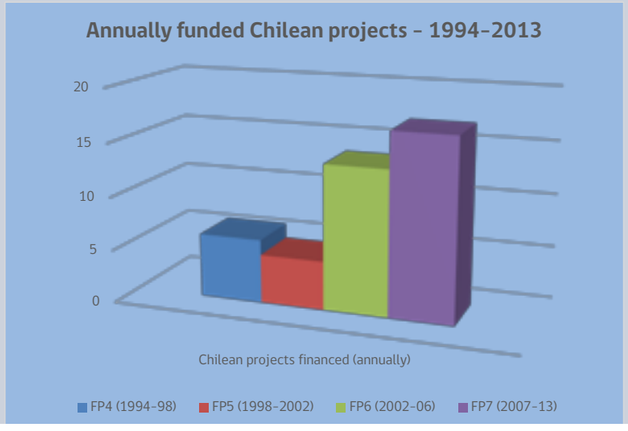
Chilean participation in European research and innovation projects continuous to grow

A new report prepared by the CEST+I project found that Chilean participation in European framework programmes for research and innovation, which has grown steadily since the 2002 Science and Technology Cooperation Agreement between the EU and Chile, continued its upward trajectory during the Seventh Framework Programme (FP7), which ran from 2007 to 2013.

The report highlights the increased success rate (from 17% to 22%) of Chilean partners involved in FP7 proposals compared to the previous period (2002-2006). Successful Chilean partners also received a higher level of annual funding, reaching nearly €1.2m (US $1.6m 1) a year (over €8.2m over the full FP7). However, the average funding per-project decreased (from €77,000 to €69,000), due partially to the fact that a large proportion (52%) of the number of projects funded by FP7 were smaller scale mobility and networking grants.

Another key finding of the report is that the majority (60%) of applications to FP7 came from institutions based in Santiago -with 29% of all applications coming from researchers linked to two Santiago - based universities, the Universidad Católica and the Universidad de Chile. However, it is also noted that (the other) three out of the five most active Chilean institutions in FP7 are located outside Santiago - the Universidad de Concepción, the Universidad Católica de Valparaíso and the Universidad Técnica Federico Santa María.

A second report on the Chilean participation in European research and innovation projects, including the analysis of the applications to the first calls for Horizon 2020, the new European framework programme, will be published by the CEST+I project in 2015.



CEST+I

CASE STUDY

are still to determine methods to identify pigments and other types of compounds such as biopolymers", explains Dr. Rivas.

Big steps

According to Dr. Rivas, one of the main advantages of participating in the MIRACLES project is the significant strengthening of international research networks. In June this year, for instance, the team from Universidad de Antofagasta had the opportunity to collaborate with Dr. Mari Carmen Ruíz from Universidad de Huelva (Spain), who visited Chile to assist with the implementation of techniques used to determine and quantify antioxidant pigments and other molecules. Collaborating with the research team in Chile, Dr. Ruíz says, "has allowed to narrow the distance between Europe and Chile and opened new venues for future collaborations. Antofagasta's unique climate conditions are suitable for large-scale cultivation of microalgae, and the Universidad de Antofagasta's laboratories are fully equipped to perform diverse biochemical analysis".

Dr. Rivas also highlights the effect that taking part in the MIRACLES project can have on the possible development of new spin-offs that bring economic benefits to the region. The project's high level of funding (€12 million), explains Dr. Rivas, allows "to cover the entire value chain in four years including the participation of 26 partners. The progress that can be made with the participation of such a diverse group is huge, and enables us to work directly with the partners involved in commercialization and technology transfer activities".

Another important aspect of the collaboration is the involvement of students who are developing their theses in connection with the project. In fact, next January two students from Chile will be heading off to Europe. They will work closely with project partners in the Netherlands and Norway to develop the necessary expertise to push for further local development in this area.


Atacama Salt lake Bioprospection

THE CHILEAN GROUP WILL SELECT NEW, ROBUST AND VALUABLE ALGAE PRODUCTION STRAINS ADAPTED TO DESERT CULTIVATION.

How can EU & CELAC collaborate to create smart cities?

Responding to the need to improve cooperation in research and innovation in smart cities between the EU and CELAC, CONICYT and the Ministry of Education, Science and Culture of Finland organized on September 10 in Santiago de Chile, a seminar that brought together a hundred representatives from academia, industry, government and the third sector from Latin America and Europe to discuss ways to enhance collaboration on smart cities. We extracted key fragments of the presentation given by Jarmo Eskelinen, President of the European Network of Living Labs (ENoLL) at the event.

Cities are a bit like old couples, they think they have unique problems, but if they go to marriage counselling will find out that they are just like any other couple and can be helped to solve their problems. No city can solve the smart city challenges alone. Services designed for one city are very expensive, bad for business, and actually they are bad services.

Living Labs are real life user driven innovation environments, where services are co-designed, tested and developed in collaboration with real user communities. The European Network of Living Labs (ENoLL) has 370 Living Labs all over the globe building interoperable activities across cities and the reason for that is to empower anyone to innovate. We want Living Labs to become the standard practice in delivering better services for citizens. The key point in working with Living Labs in cities is to develop user driven methods, scalable, replicable and interoperable across cities.

Communities as partners

Humankind has always done everything together, that is how we operate as species. In some areas like culture and sports, user driven innovations have always been the key to develop new things. What it has changed recently is that we now have new sets of tools to connect with our peers and to connect communities together.

People use interactive technologies every day. Information can flow in both ways between service providers and service users. What this enables is much more efficient collaboration with the communities, so we can use communities as partners.

Santiago de Chile

There are things that communities do which could not have been done in any other way and that is the key to understand how we could benefit from community participation in cities, how we can empower citizens to work with us in making better cities, so that city services are not provided by the city as an authority, but by the city as a community, by companies, individuals, different groups of people and the city organization in joint activities.

Smart cities need a restart. The first wave of smart cities in places like Masdar in Abu Dhabi, adopted a technology push approach, which does not seem to be the right way to make a city smart. The right way would be to empower citizens to make cities smart.

We need a restart because the sort of solutions implemented in cities like Masdar do not seem to be able to manage the complexity of urban life. We cannot solve all city problems. We can solve some aspects of the city problems and build loosely connected solutions.

Cities are complex organic creatures and of course most cities are not technology cities at all. Megacities do not grow because someone invests a lot of money in technology, they grow just because they grow, the only thing they have is a community.

The question is how can we work with a community which has no technology to make a city smarter? We have seen some examples. In Tanzania, empowered people with smart phones and other kinds of gadgets built a map of their surroundings for community action, and the result was a major hub of activity in an unplanned area of the capital. This is happening in different places and different countries as we speak.

Then we have cities like Santiago which is a retrofit city. There is a lot of existing legacy, which is designed just for Santiago and that is not compatible even with Gran Concepción. We need to retrofit new solutions to match the previous legacy and that is a cumbersome task. We do need top-down decisions, but we also need to work at the grassroots level to make that happen.

Interoperability challenge

If and when the market of the size of Santiago is not enough and neither is the market of the size of Helsinki, we can work so that solutions that are developed here will be used in Rome, New York, or Helsinki.

A key point to that is an open approach. Cities should see themselves as enablers of innovation. There are some things cities own, define and they invest in, but there is a whole field of city activities which they can monitor, motivate, and drive. Cities can stop doing something which is well managed by the market or the community. Cities should open its system interfaces and data processes for innovation. In practice that means to bring all stakeholders together, eventually in an urban Living Lab, to collaborate on a permanent basis and create city services in unison, building also opportunities for companies, the city and for proper citizens' feedback.

Changing a city takes time. There needs to be a combination of a long term vision and agile pilots to change the city.

The smart cities market needs city internal and city2city interoperability solutions. That is why we currently do not have a proper smart cities market because we do not have proper city2city interoperability yet. We can build a single marketplace for smart solutions through collaboration, but cities should be in the driving seat.

Jarmo Eskelinen.

"CITIES SHOULD OPEN ITS SYSTEM INTERFACES AND DATA PROCESSES FOR INNOVATION. IN PRACTICE THAT MEANS TO BRING ALL STAKEHOLDERS TOGETHER, EVENTUALLY IN AN URBAN LIVING LAB, TO COLLABORATE ON A PERMANENT BASIS AND CREATE CITY SERVICES IN UNISON"

Dr. Tim Patten giving a presentation at CONICYT

Dr. Tim Patten

Program Director of the Chemistry Division at the U.S. National Science Foundation, visited CONICYT as part of an exchange of best practices in programme management between the two institutions.

How did your work visit to Chile come about?
The U.S. Embassy in Chile had a meeting with the President of CONICYT where they decided to have an exchange of programme directors between CONICYT and one of the science agencies in the U.S. As part of this programme the U.S. State Department put out a request for people to apply for a fellowship to come to CONICYT and take part in this exchange. The visit had several objectives. One was for someone from NSF to come down to see CONICYT's practices and policies and then also provide our perspective on these things. The other objectives were to reinforce institutional ties between CONICYT and NSF, the closest partner agencies in the two countries, and to talk to the academic community here to let them know the ways they can network with our investigators in the U.S. In a very thorough way I got to look at the science and engineering community in Chile, what is being done, their objectives and the important challenges being tackled here in this country.

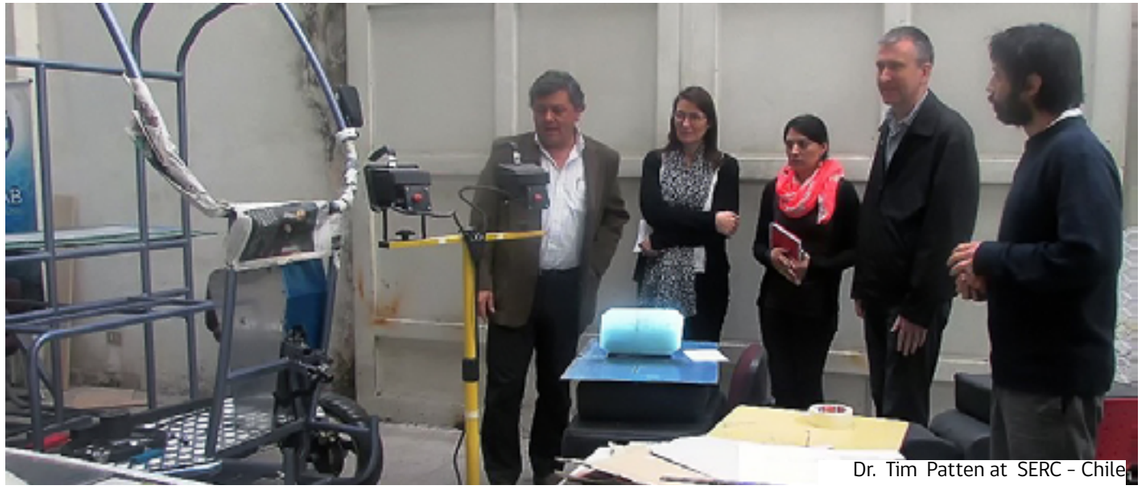
What is the focus of NSF's strategy for international cooperation?
The focus of the strategy is to try to facilitate our Principal Investigators (PIs) to work with the best scientists wherever they are in the world, so we have a bunch of different mechanisms that allow us to support that financially. The other part of the strategy is to work with partner agencies, so that we can potentially leverage resources on both sides of the equation. There is not a 'focus country' in the world, but we know from statistics that the top countries our PIs collaborate with are Germany and the UK. In South America the top country that we work with is Chile, in part because of its unique facilities, and obviously the astronomic facilities as well. Besides astronomy, the areas with the most potential for cooperation with Chile are, to me, geological sciences, engineering, and agriculture.

> "...COMMUNITIES NEED TO BE AWARE OF EACH OTHER – THERE HAVE TO BE THOSE CONNECTIONS BETWEEN THE PIS TO BEGIN WITH AND THEN THE AGENCIES CAN SUPPORT THAT"

What common challenges could you identify between CONICYT and NSF?
A common challenge is trying to get the balance right between doing the review process as fast as we can and trying to come up with the best review decisions. I think that working with the review committee is a challenge anywhere in the world.

How could scientific and technological cooperation between Chile and the U.S. be enhanced?
On the one hand communities need to be aware of each other – there have to be those connections between the PIs to begin with and then the agencies can support that. Defining what mechanisms are appropriate for that is a challenge worldwide, because there are easy things that each agency can do unilaterally, but working together is more difficult. In our experience conducting bilateral agreements and joint calls with partner agencies is a lot of work in order to make one call work, so I think that's a challenge that a lot of agencies are talking to each other about, to work out what mechanisms are most appropriate.

What will you take away from your experience in Chile?
It has been a great experience and I have learned a lot. I probably knew, but I really learned by coming down here that there is world class science everywhere in the world. The country itself is an amazing country, it is beautiful, and has amazing resources. The weeks I have been here I have seen amazing potential and that is one of the things that I will take back as well, along with the great interactions I have had here in CONICYT. I am looking forward to have people from CONICYT come and visit us at NSF.



Dr. Tim Patten at SERC - Chile

Photo Credit: Aldo Solimano/AFP-Getty Images

Supporting decision making in natural disasters through the use of ICT

Connectivity problems following the occurrence of natural disasters in urban zones are commonplace. RESPOND is a research network of scientists from South America and France which proposes a novel solution to this problem based on a streaming platform for mobile phones specialized in natural disasters. The network is supported by the STIC Amsud Regional Programme.

Natural disasters such as earthquakes, tsunamis, volcanic eruptions and landslides produce emergency scenarios where communication lines are often saturated, given the sudden rise in the number of people using mobile phones, and power supplies are down. The damage to Internet access and communications makes it difficult for affected people and decision makers to access information, which is crucial to mitigate the effects of a catastrophe of natural origin.

RESPOND is a research network coordinated by the Universidad de Santiago (USACH) in Chile that involves the participation of researchers from Argentina, Brazil and France. According to Dr. Mauricio Marin, the project coordinator, the aim is to develop "a streaming platform for mobile phones specialized in natural disasters that supports affected people and decision makers on the ground".

RESPOND builds upon the previous work in the area of distributed systems between the researchers involved enabling them to "formalize the collaborations they had developed previously", says Dr. Marin. Prior to this project the Chilean team had extensively collaborated with the research group led by Dr. Veronica Gil-Costa from Universidad Nacional de San Luis in Argentina through the production of joint publications in scientific seminars and high-impact journals, and co-tutelage of Master and PhD students. However, the idea of integrating a research network in collaboration with Brazil and France came from two young researchers from the Chilean team, Dr. Erika Rosas and Dr. Nicolas Hidalgo, who completed their PhDs in Computer Science at the University Pierre et Marie Curie (Paris 6) under the supervision of researchers from the INRIA REGAL team integrated by researchers from Paris 6 and the National Institute for Research in Computer Science and Control (INRIA). One of those researchers, Dr. Luciana Arantes, a Brazilian professor working in Paris 6, made in turn the connection between the research groups from Brazil and France.

According to Dr. Gil-Costa the RESPOND project "incorporated a new line of research to the collaboration between the teams from Chile and Argentina and created new links with research groups from Brazil and France working in the area of distributed systems". Moreover, Dr. Hermes Senger, researcher from the Universidade Federal São Carlos, says "this project gave me the opportunity to collaborate with researchers in South America for the first time, gaining new insights into some key research problems. I think it is very important to strengthen scientific cooperation in the region and I hope to continue collaborating with the partners in the project".

The solution

The solution proposed by the RESPOND project focuses on stream computing and uses datasets from a tweets collection obtained from the 2010 Chilean earthquake to build the experimental scenarios and the experimental design. "We approach the problem of connectivity as a continuous flow of data. There is no time to store data neither to perform costly processes. Data flows and you know that it will be lost, just like twitter, you do not see every single message that is transmitted through your mobile phone. The question is how to make useful computing in a context where for instance you cannot even calculate an average of the messages transmitted on a particular topic during a day. You have to use approximate algorithms", explains Dr. Marin.

RESPOND uses datasets from a tweets collection from the 2010 Chilean earthquake.

In order for the solution to work, certain key requirements need to be met. The streaming platform needs to be tolerant to disruption, which means for instance that a mobile phone that has managed to disseminate some information following the occurrence of a natural disaster, should be able to collaborate with other mobile phones, consuming little energy, and to disseminate useful information, despite not having signal or internet service. Additionally, the platform should

Communication in disaster scenarios. Rescue team communication (left), Information dissemination, and Situation awareness.

have the capacity to prioritize critical events, which means it should only disseminate relevant messages in the context of natural disasters and identify priority devices within the network, such as those from emergency services.

Significant progress to build the solution has been made so far by the research network. "We surveyed the current solutions in the fields of expertise of the different research groups and found that by taking different solutions currently available and combining them we can build the solution we propose", says Dr. Marin.

Another important aspect of the project has been the scientific missions that have allowed the research network to exchange ideas about the solution being developed. According to Dr. Gil-Costa the missions "have created a space for debate and exchange of ideas between the research groups of the different countries involved with the aim of finding practical and simple technological solutions that could be used in situations of natural disasters". For Dr. Erika Rosas, "researchers' mobility facilitates research as it allows the time to properly plan and make the most of international collaboration for both students and researchers".

"Innovation - highlights Dr. Marin - involves the not easy task of understanding what exactly the product is, to then identify the research problems involved and propose solutions. We have been exploring what solutions we can build, solving some problems and thinking how the final product might look like. Building a product is a long term process and the progress made in the project has allowed us to leverage some additional funding for R&D", explains.

New avenues for collaboration

The scientific collaboration encouraged by RESPOND has not been limited to the project. "The main advantages of a STIC Amsud project are capacity building, and to have the opportunity to identify areas of common interest to continue collaborating. We are going to have in Chile people with the knowledge and international connections to develop software tools to support emergency management and decision making in catastrophe situations, which can have a great social impact given the huge cost in lives and resources these events have", says Dr. Marin.

In fact, the group from Chile is currently developing further software tools to support decision

"We are going to have in Chile people with the knowledge and international connections to develop software tools to support emergency management and decision making in catastrophe situations, which can have a great social impact given the huge cost in lives and resources these events have"

National Seismological Centre of the University of Chile

making following natural disasters. The Centre for Information Technology Innovation for Social Applications (CITIAPS) at USACH co-finances with the Department of Geophysics of the Universidad de Chile a project to develop a software solution that supports early detection of an earthquake's hypocenter based on the analysis of tweet messages. Determining as early as possible the hypocenter following major earthquakes is vital to prepare for a possible tsunami. Currently, seismology service operators try to determine the hypocenter based on information received from instruments scattered all over the country. With the software being developed by CITIAPS, operators are able to access real time information displayed on a map and pay attention to the areas where most emergency messages are being generated.

A further CITIAPS project uses data generated by social networks to identify needs (e.g. water and electricity) following natural disasters. Dr. Erika Rosas explains "when an earthquake occurs people generate large number of messages and they can be analysed and classified by machine learning methods to detect urgent needs in real time". The RESPOND project has also paved the way for collaboration projects in Big Data, a major area of computer science. Researchers from INRIA and the Department of Informatics of Universidad Federico Santa María and USACH are participating in the Associate Team INRIA-ARMADA project to develop a solution for managing and processing dynamic Big Data.

Additionally, the RESPOND group from Argentina has begun collaborating with the group in Brazil in the study of large scale systems through the use of BSP (Bulk-synchronous Parallel) models. This is an alternative method to study new algorithms and strategies or to evaluate critical scenarios on large scale systems without affecting the system.

For more info visit
http://sitios.diinf.usach.cl/respond/

Stic Amsud Regional Programme

This programme promotes and strengthens the collaboration of research networks in the field of Information and Communication Technologies as well as related sciences, by financing the exchange of researchers and doctoral students between Argentina, Brazil, Chile, Ecuador, Paraguay, Peru Uruguay, Venezuela and France.

Yearly calls for applications are in December-May.

For more information about the programme visit www.sticamsud.org

PhD researchers Jessica Ocampos & Pablo Salas

on the move Promoting innovation for sustainable development

at the University of Cambridge

Cambridge Knowledge and Technology Transfer Platform for Latin America is a network for knowledge and technology transfer to emerging regions co-founded by Jessica Ocampos and Pablo Salas, CONICYT-supported PhD researchers at the University of Cambridge in the UK.

By Jessica Ocampos & Pablo Salas

After spending three years as PhD researchers in Cambridge, we and José Vallejos from Ecuador founded in March 2014 the Cambridge Knowledge and Technology Transfer Platform for Latin America. The establishment of the platform was motivated by our interest in contributing to build bridges between researchers in Cambridge and researchers in our countries of origin. We also wanted to make the most of our networks in the UK and to draw interest of researchers at Cambridge in collaborating with partners in Latin America.

Since the platform began it has promoted local capacity building in Latin America through international research collaborations, technology transfer and human capital enhancement, achieving several significant results so far.

Building bridges

In the first place, our participation in the International Outreach Programme of Cambridge Enterprise, the University of Cambridge's commercialization arm, has led to broaden the scope of countries involved in collaboration programmes, including Colombia, Ecuador and Chile.

We are currently implementing programmes in Colombia and Ecuador, supporting their processes of creation and strengthening of technology transfer offices. In Chile, last April we organized a visit with Prof. Chris Lowe, one of the university's champion entrepreneurs, to introduce the platform to key Chilean contacts in the area of innovation, including the Chilean Economic Development Agency (CORFO), the Scientific and Technological Development Support Fund (FONDEF), and the Federation of Chilean Industry (SOFOFA). As a result of that initiative, Chile became a priority country for further collaboration projects within Cambridge Enterprise and the University of Cambridge. We also established links with key partners in order to narrow the gap between industry and academia in Chile. Additionally, we have worked connecting our Chilean counterparts with potential partners in the UK, and creating awareness in Chile, and other Latin American countries, about how we can assist them.

We also recently completed a programme in Brazil, and have implemented, in collaboration with the Engineering Department of the University of Cambridge, a Pilot Project for Exchange and Internships in South America.

A foothold in the UK

During the activities of the platform we have witnessed the great interest and eagerness of the University of Cambridge and its partners in the UK to collaborate with Latin American countries, particularly Chile. This enthusiasm is in great measure the result of the platform acting as a first point of contact for UK innovators interested in collaborating with partners in Latin America and the different initiatives that the platform has taken forward to increase awareness about Latin America.

The successful case of Cambridge has been a source of inspiration for many countries, not only in Latin America, but also in Asia and Middle East. Through the International Outreach Programme of Cambridge Enterprise, we are helping developing countries to narrow the gap between industry and academia, to create and improve their technology transfer offices, and to strengthen entrepreneurial environment inside their universities.

We are also encouraging international cooperation among companies, especially when it involves the transfer of sustainable cutting-edge technologies that help to improve productivity. Technology companies at Cambridge are the best example of how industry can benefit from university research, and they promote this knowledge-based entrepreneurial culture in the same way that we do. The successful transfer of technologies from Cambridge to developing countries has encouraged private investors, as well as policy makers and academics in those countries, to think of research and industry as very good partners.

The Vice-chancellor of the University of Cambridge, Prof. Borysiewicz, has said: "We encourage young investigators to become entrepreneurs because this encouragement serves to society". We firmly believe that as long as we don't see the fruits of our research as important to society, then there is no point at all in being a researcher. It is our responsibility to generate interest in society about what we do, and the high quality of our research. Once we do that, society, including industry, will recognise research as a key part of sustainable development, and therefore, wealth generation.

Cambridge Knowledge and Technology Platform for Latin America at a meeting with the Chilean Economic Development Support Fund in April.

Graduate Research Opportunities Worldwide-Chile (GROW-Chile)

who can apply?

National Science Foundation Graduate Research Fellows from Science, Technology, Engineering and Mathematics (STEM) fields who have completed at least one year of their PhD programme at the time of application.

support

NSF provides an allowance to travel to Chile and CONICYT provides a monthly per diem allowance of $600.000 CLP to cover living expenses during the period of the study visit.

dates

October-November

more info

www.nsf.gov

Trinidad García mgarcia@conicyt.cl

Global Alliances for Excellence

who can apply?

Researchers with a permanent affiliation with one of the participating foreign universities (Harvard University, Columbia University, UC Berkeley and MIT). In the case of Chilean partners, those eligible to support the project locally are researchers with a permanent affiliation with a Chilean accredited university or research institution.

support

Up to US$30,000 per project

dates

October-November

more info

www.conicyt/pci

Trinidad García mgarcia@conicyt.cl

ERANet-LAC Joint Call on Research and Innovation

who can apply?

Partnership of institutions including at least four eligible partners from four different countries with at least two countries from each region. The consortium may not exceed a maximum of two partners per country.

support

Participating agencies provide funding to their respective national research teams within each multilateral project. The total amount committed by partners is 11.4 million euros

deadline

November 27

contact

Trinidad García mgarcia@conicyt.cl

Chile-China Postdoctoral Fellowship 2014

who can apply?

Chilean or foreign researchers (residing in Chile or outside) who hold a doctoral degree in astronomy or related sciences.

support

Around US$38,000 per year for 2 years

dates

November-December

contact

Javier Martinez jmartinez@conicyt.cl

Terms of reference and application at:
www.conicyt.cl/astronomia

October

5-6	Science and Technology in Society Forum (Tokyo, Japan)
6	Chile-Japan Academic Forum 2014 at Utokyo (Tokyo, Japan)
10-12	ECOS Commitee Meeting (Santiago, Chile)
11-12	Chile-EU Solar Energy Workshop (Seville, Spain)
12-13	CEST+I Project Consortium Meeting (Seville, Spain)
17-18	Workshop Building International Cooperation in Arid Zones Research (Santiago and Antofagasta, Chile)
19-20	Regional Global Research Council Meeting (Lima, Peru)

November

24-25	ENSOCIO Project Consortium Meeting and Workshop (Marseille, France)
25-26	CYTED Steering Committee Meeting & General Assembly (Mexico City, Mexico)
26-28	ALCUENET Capacity Building and Networking Workshop on biodiversity and climate change research (Marseille, France)
27-28	VIII Iberoamerican Forum and Ministers and Senior Officials in Science, Technology and Innovation Meeting (Puebla, Mexico)
TBC	H2020 Info day at CRUCH (Santiago, Chile)

December

9-11	ALCUE NET - Geothermal Energy Workshop (Salta, Argentina)

the IR team

Director
Gonzalo Arenas

Director's Secretary
Ingrid Tapia

Deputy Director
María Mesonero Kromand

International Cooperation Unit Coordinator
Rodrigo Monsalve

International Cooperation Programme Coordinator
Cecilia Velit

International Cooperation Programme Coordinator
Marlene Vargas Neira

International Cooperation Programme Coordinator
Catalina Palma

International Cooperation Programme Coordinator
Natalya Molina

ALMA - GEMINI Funds Coordinator
Javier Martínez

Astronomy Budgeting and Management Officer
Andrea Zuñiga

QUIMAL Fund Officer
Paola Jarpa

Head of Budgeting and Management for International Cooperation
Ricardo Contador

Projects Monitoring Coordinator
Adrien Quisefit

International Relations Unit Coordinator
Trinidad García

EU Projects Coordinator
Matt Sheldon

Multilateral Projects Coordinator
Emilie Béland

Projects Executive
Pedro Figueroa

Dissemination and Events Officer
Ana María Abraham

French Embassy Delegate
Héloïse Verweyen

visit

www.conicyt.cl

www.sti-cooperation.cl

issuu.com/dri-conicyt

contact us

relacionesinternacionales@conicyt.cl