Program at a Glance

Blue Auditorium Red auditorium

WEDNESDAY 4

1:00-2:00 p.m. **Registration Light Lunch & Coffee**

2:00-2:30 p.m. **Introduction, welcome speeches**

2:30-3:20 p.m. **Christopher Lowe**
Driving innovation into application - the passion behind creating a biotechnology company

	Session I: LifeScience and Biotechnology	Session I: Industrial Processes and Renewable Energies
3:30-4:05 p.m.	**Francisco Veas** To Be Announced	**Ernesto Bucher** Renewable Energies in 2010: Status Report and Critical Review of Future Energy Supplies
4:05-4:40 p.m.	**Cristóbal Uauy** What domestication missed: exploiting wild emmer to improve wheat	**Francisco Rovira** Agricultural mobile robotics: power with intelligence
4:40-5:00 p.m.	**Bertsy Goic** RNAi, the key player in antiviral response in insects	**Mauricio Osses** Transportation in an energy-constrained world

5:00-5:20 p.m. **Coffee Break**

	Session II: LifeScience and Biotechnology	Session II: Industrial Processes and Renewable Energies
5:20-5:40 p.m.	**Leslie Knapp** To Be Announced	**Claudio Fuentes** Evaluation of microalgae production for biodiesel - generation in Chile
5:40-6:00 p.m.	**Fernan Federicci** Synthetic Biology and iGEM: a novel approach to biotechnology and education	**Juan José Sarralde** Urban Cluster Configurations and their Implications for Renewable Energy Generation

6:00-7:30 p.m. **Workshop CONICYT / Jani Brouwer**
Linking researchers and graduate students abroad with research centers in Chile

7:30 p.m. **Finger food and wine tasting / Poster Session**

THURSDAY 5

8:30-9:20 a.m. **Pablo Valenzuela**
Science: a key ingredient for Chilean social and economic development

9:20-11:00 a.m. **Workshop/Yan Bello**
An agile and participatory approach to creating and leading multidisciplinary

11:00-11:2 a.m. **Coffee Break**

	Session I: Physical and Technological Sciences	Session I: Social Sciences
11:20-11:50 a.m.	**Ricardo Rivera** Zernike polynomials and its Applications	**Thomas Tufte** Youth, Communication and Social Change
11:50-12:10 pm.	**Paola Arias** Revealing the low energy frontier of Particle Physics	**Lelya Troncoso** Rethinking gender from the south
12:10-12:40 pm.	**Ricardo Baeza-Yates** Web Mining or The Wisdom of the Crowds	
12:40-1:00 p.m.	**Mauricio Valenzuela** Anyons and supersymmetry	**Andrea Cerda** Imaginaries of Brand New Nations
1:00-1:30 p.m.	**Marcelo Espinoza** Load Forecasting: From University Research to Corporate Analysis	**Marisol Basilio** Pre-linguistic signs as tools for regulation in Adult-Child interactions
1:30-1:50 p.m.	**Carolina Salinas** Seasonal and interannual variability of sea surface temperature around the South Shetland Islands. The Bransfield Current as a gravity current	

2:00-2:45 p.m. **Lunch**

THURSDAY 5

	Session II: Medical Sciences	Session II: Social Sciences
2:50-3:20 p.m.	**Gabriela Repetto** Chromosome 22 microdeletion syndrome: searching for modifier factors	**Guillermo Guzmán** Sustainable social strategies for technology transfer
3:20-3:40 p.m.	**Rodolfo Miralles** Electromyographic Activity of the Mandibular and Cervical Muscles during Tooth Clenching and Grinding	**Carolina Pinto** How does a foreign student become or not an immigrant? Exploring the social trajectories of Latin-Americans postgraduate students in France and US
3:40-4:00 p.m.	**Fabien Marchand** Chronic pain: Future treatments	**Cecilia Ibarra** Participation of Doctoral Graduates in Industry Learning Systems in Chile
4:00-4:20 p.m.	**Alejandro Arenas-Pinto** HIV/AIDS: Update on PI monotherapy studies	**Herman Elgueta** Exploring socio-psychological variables underlying the acceptance or opposition towards proposed new power plants in Chile
4:20-4:40 p.m.		**Andres Otero** Labor market participation and pension incentives

4:45-6:30 p.m. **Free Social Event - Scientific tour around Cambridge**

8:00-12:00 p.m. **Paid Social Event - Traditional Academic Dinner (Harry Potter style)**

FRIDAY 6

9:00-9:50 a.m. **Benny Dembitzer**
The looming world food famine

10:00-11:00 a.m. **Alison Wright, Nature Physics & Stella Hurtley, Science**
Workshop on scientific publishing

11:00-11:30 a.m. **Coffee Break**

	Session I: Medical Sciences	Session I: Interesting Collaborative Initiatives
11:30-12:00 a.m.	**Christian Kell** Why left is right in speech production	**Ariel Orellana** The use of genomics to maintain the competitiveness of the Chilean fruit industry
12:00-12:30 a.m.	**Ricardo Araya** To Be Announced	**Gudrun Kausel** Chilean-German Scientific Cooperation and programs of the German Research Foundation DFG
12:30-12:50 p.m.	**Eugenio Rodríguez** Neural synchronization dynamics in human visual perception	**Mark Anderson** A transatlantic knowledge transfer network

	Session II: LifeScience and Biotechnology	Session II: Industrial Processes and Renewable Energies
1:00-1:30 p.m.	**Felipe Zilly** Patents & Scientists	**José Luis Opazo** Processes of Technological Niche Creation: the case of off grid renewable energy rural electrification in Chile
1:30-2:00 p.m.	**Juan Carlos Fontecilla** Structural biology of hydrogen and carbon monoxide metabolism and its connection to the origin of life	**Borja Velazquez- Martí** Overview of the systems for spatial assessment of the biomass, and logistic implementation in the delivery chains as renewable energy or raw material

2:00-2:30 p.m. **Closing event - End of Conference**

2:30-3:30 p.m. **Light Lunch**

Extra Social Activities (optional)

Paid Social Event - Punting in the Cam river

Paid Social Event - Party

ENCUENTROS
CAMBRIDGE 2010
INTEGRATING CHILEAN RESEARCH WORLDWIDE

CAMBRIDGE UNIVERSITY CONFERENCE VOLUME
4-6 AUGUST 2010

CONFERENCE VOLUME, CAMBRIDGE UNIVERSITY,

4-6 AUGUST 2010

www.encuentros2010.org

ENCUENTROS

CAMBRIDGE 2010

INTEGRATING CHILEAN RESEARCH WORLDWIDE

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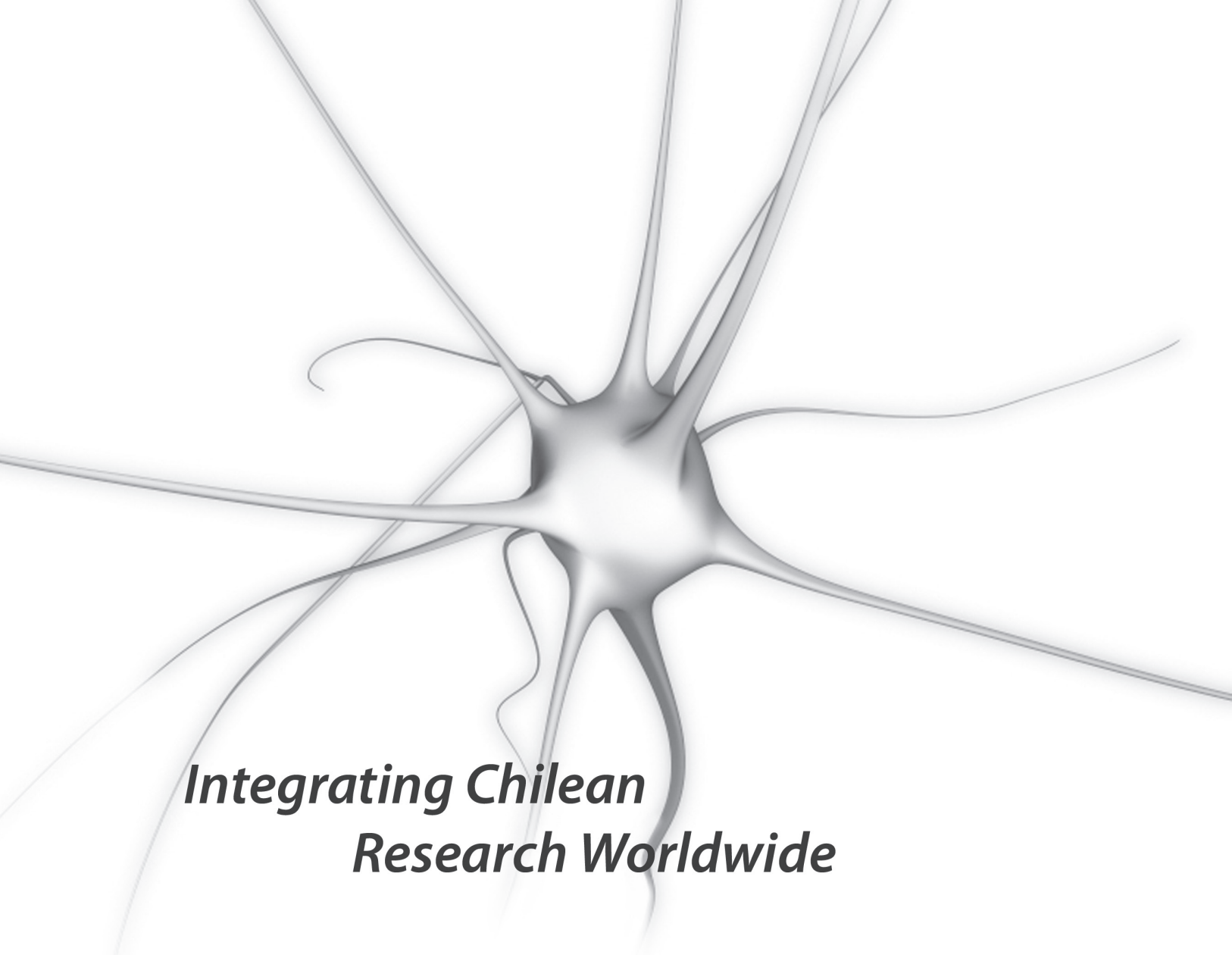

Integrating Chilean Research Worldwide

ENCUENTROS 2010

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WELCOME
by THE ORGANIZERS

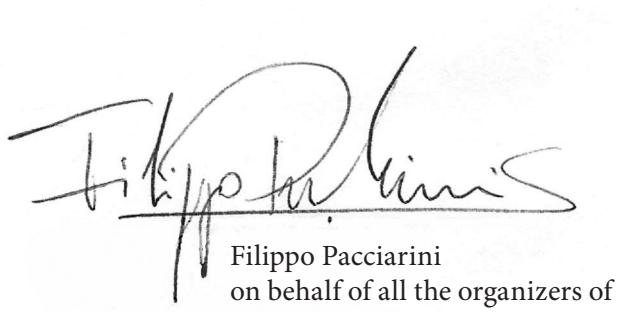
Welcome to Encuentros 2010!

"Encuentros" began, as its name suggests, as a gathering of Chileans that were studying science in Europe. Its aim was to not only to catch up with old friends, but also to get to know the scientific works of fellow Chilean colleagues. The first meeting happened in Dresden in 2006, with about 8 participants. The following year, that number grew to 15 in Milan. Then we were able to gather 97 participants in last year's Encuentros 2009 in Gottingen.

"Encuentros 2010" builds from those earlier meetings. In this edition of "Encuentros", there are not only more participants, but also the quality of speakers has dramatically increased. In addition, the nature of scientific research has become evermore interdisciplinary; consequently, the diversity of topics being represented has also expanded.

To promote better networking and communication between Chilean scientists in Chile and abroad, the program includes presentations of senior scientists working in Chile and in Europe. The program is further complemented with workshops and interesting social activities. And if that is not enough, we have distinguished speakers who are working in important research organizations throughout Europe and Chile, all of which in some way or another will discuss topics such as research funding, cooperation, mobility and networking.

It is with this in mind that we would like to welcome you to "Encuentros 2010". The organizers hope that you learn a lot from the scientific talks, but also that you find meeting fellow Chilean scientists and entrepreneurs working both, in Chile and in Europe a rewarding experience.



Filippo Pacciarini
on behalf of all the organizers of Encuentros 2010

Sr. Marcelo Awad A.
Presidente Ejecutivo del Grupo Antofagasta Minerals

ANTOFAGASTA MINERALS Y ENCUENTROS 2010:
COMUNIDAD DE OBJETIVOS

Saludo del Sr. Marcelo Awad A., Presidente Ejecutivo del Grupo Antofagasta Minerals
Santiago, julio 2010

Quiero enviar el saludo de los mineros del Grupo Antofagasta Minerals a los investigadores e innovadores chilenos que se congregan en Encuentros 2010, reconociendo tanto su labor permanente -en sus distintos centros de estudios, fundaciones o empresas- como su interés por integrar y consolidar un esfuerzo conjunto en pos del desarrollo de la creatividad y la innovación como pilar estratégico del desarrollo de Chile.

Por mis responsabilidades profesionales me tocó residir y trabajar por varios años en el Reino Unido, y por lo tanto conozco muy bien lo que es estar lejos de los seres queridos, pero al mismo tiempo motivado por una labor que, cada uno en lo suyo, pueda considerar relevante no solo para el desarrollo personal sino también para nuestro país.

Cuando un chileno está fuera del país y ocupa un lugar como el que ustedes detentan, siente sin duda una gran responsabilidad, pues este tipo de oportunidades siguen siendo en nuestro país un privilegio y por lo tanto conllevan el deber no solo de hacer el mejor trabajo, sino también de proyectarlo como un aporte para el desarrollo de nuestro país.

Antofagasta Minerals es una empresa listada en la Bolsa de Valores de Londres, dentro del FTSE 100, y es el primer grupo minero privado de capitales mayoritariamente chilenos en la gran minería mundial. En los últimos diez años hemos invertido más de US$ 7.000 millones en Chile y durante 2011 nos convertiremos en el décimo grupo productor de cobre a nivel mundial. El Grupo opera Minera Los Pelambres, ubicada en la Región de Coquimbo, así como Minera Michilla y Minera El Tesoro, en la Región de Antofagasta, donde a fines de 2010 pondremos en marcha un nuevo gran yacimiento, Minera Esperanza.

Este Grupo trabaja fuertemente para seguir creciendo e internacionalizar sus actividades, pues estamos convencidos de que debemos pensar y actuar globalmente, respetando a la vez el entorno ambiental y social local, pues buscamos generar valor de manera integral y sustentable en el tiempo.

Hoy poseemos proyectos y exploraciones en América del Sur y del Norte, Asia, África y Europa. En ese camino tenemos plena conciencia de que solo una mirada innovadora, dispuesta siempre al cambio, al conocimiento y la adaptación ante nuevas realidades, nos permitirá alcanzar nuestros objetivos.

Es por ello que nos sentimos tan identificados con la labor que ustedes realizan y con el espíritu que domina a este Encuentros 2010, como plataforma de conocimiento mutuo y también proyección de sus conocimientos y avances en sus distintos campos.

Espero que el apoyo del Grupo Antofagasta Minerals a Encuentros 2010 permita ayudar a alcanzar los objetivos que se han planteado para este año. ¡Mucho éxito!

GRUPO ANTOFAGASTA MINERALS

PROGRAM OVERVIEW

WEDNESDAY 04.08.10

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GENERAL INFORMATION

Robinson College is situated in Grange Road on the west side of Cambridge. Grange Road runs between Barton Road and Madingley Road and is parallel to Queens' Road (the 'Backs').
Maps can be found here: www.robinson.cam.ac.uk/conferences/maps.php

Catering Services

Breakfast
Breakfast is available in the Garden Restaurant until 9.00 am. This is a staff assisted self servicemeal. A full range of cooked items and cereals is available as well as continental breakfast. A self clearing system operates in the Garden Restaurant area.

Lunch
Lunch is served in the Garden Restaurant usually from 12.30 - 2.00 pm and is again a self service style meal to ensure that delegates are offered a wide range of hot and cold dishes. Our Head Chef selects the menus each day and account is taken of which menus have been chosen for the evening meal. Hot beverages are served from a separate coffee bar in the dining area.

Email and Internet Facilities
Internet connections are available free of charge in bedrooms and meeting rooms. Please refer to our website for further details and important information:

http://www.robinson.cam.ac.uk/conferences/facilities/internet.php.

Please note that an ETHERNET cable is require to access this facility. We also offer a conference wireless network in public areas (not in bedrooms) for internet and e-mail access for use by conference organisers, speakers and delegates. Access the link above for information and instructions.

Taxis
The Porters' Lodge can order taxis on request. It is helpful if delegates who require a taxi on

departure give their request to the Porters' Lodge the night before leaving to ensure that sufficient taxis are available.

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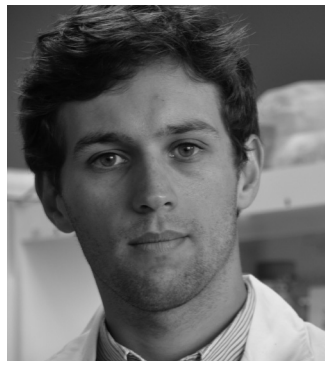

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LECTURES AND WORKSHOPS

Driving innovation into application - the passion behind creating a biotechnology company

Christopher Lowe

Director, Institute of Biotechnology, University of Cambridge

Professor Lowe speaks as one of the driving forces ithin the Cambridge healthcare cluster, having the unique position of spinning out 7 successful biotechnology companies while maintaining his role as Director of the Institute of Biotechnology within Cambridge University.

He will speak on the critical factors behind creating successful healthcare biotechnology companies form an academic environment - the people, the technologies and the passion behind the drive to commercial success.

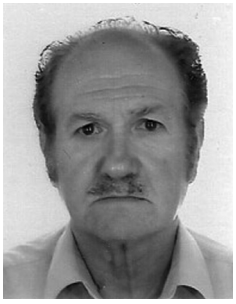
Science: a key ingredient for Chilean social and economic development

Pablo Valenzuela

Director, Fundación Ciencia para la Vida, Chile,

pvalenzu@bionova.cl

The talk will review the bright and the not so bright sides of Chilean science and technology. The author will review a number of strategies and scientific development programs that are currently being implemented in Chile. The example of Fundacion Ciencia para la Vida, as a leading research center with broad international collaborations, will be presented as a case study.



The looming world food famine

Benny Dembitzer

Business School, University of Greenwich, United Kingdom,

There is a perfect storm of world famine looming on the horizon. A combination of events and forces, including growth of population, changing climate, decrease in arable land, increased salinity of the land, increasing demand for animal feed and biofuels, urbanisation, unwise food policies and unfair trading practices is increasing the danger that the world will be running out of food in the next few years. Those who have tradable items and can pay for their export of foods will manage to survive. Those who have nothing to export will be pushed beyond the edge. The presentation is aimed at making people aware of the forthcoming world food crisis and encourage a drastic approach to food security.

Renewable Energies in 2010: Status Report and Critical Review of Future Energy Supplies

Ernesto Bucher

Physics, ISC Konstanz, Switzerland,
bucher.isc@bluewin.ch

The 21st century is expected to enter human history as a transition century from the era of fossil fuels to renewable energies. The population of 6.83 bln (June 2010) is expected to increase to at least 10 bln by the year 2050, leading to a doubling of the present world energy consumption, mostly to be drawn from renewable energies. This represents a dramatic challenge, not only to the renewable energy industry, but also to the freshwater supply industry. The energy production is strongly dependent on abundant freshwater resources, already in short supply for industrial, residential and agricultural consumers. The production of freshwater also needs clean energy. Therefore, the freshwater problem is inherently connected to the energy problem.This talk will review all current renewable energy sources: wind power, solar thermal, solar electricity, biomass, hydroelectric and geothermal power, and also some unconventional ideas, as well as the freshwater problem, including their problems and recent development. This implies also a comparison between the different renewables with respect to their economy, their environmental impact on CO2 reduction, energy payback time and some real and virtual barriers to their development.

Agricultural mobile robotics: power with intelligence

Francisco Rovira-Mas

Ingenieria Rural y Agroalimentaria, Universidad Politecnica de Valencia, Spain,
frovira@dmta.upv.es

The fast development of electronics and computers in the last two decades has induced the move from purely mechanical vehicles to mechatronics design. Recent advances in sensors and information technology are pushing the design of mobile farm equipment to continuously incorporate higher levels of automation under the concept of intelligent vehicles. This talk introduces the notion of agricultural field robotics and provides an overview of recent applications and future approaches within this discipline. The vehicles under consideration are designed to move in off-road environments, and include agriculture, forestry, and construction machines. Such features as automatic steering, safeguarding, management monitoring, and other precision agriculture capabilities will be considered and illustrated along the presentation.

Urban Cluster Configurations and their Implications for Renewable Energy Generation

Juan José Sarralde

Department of Architecture, University of Cambridge, United Kingdom,
jjs47@cam.ac.uk

The energy required by buildings - mainly sourced from fossil fuels - accounts for more than 40% of the UK's CO2 emissions. Consequently, the British government has set the ambitious target of an 80% reduction of these emissions by 2050. Considering that a large number of already existing buildings will remain by that year, refurbishment for enhancing the energy efficiency of the existing stock is a major task. On the other hand, there is an increasing demand for buildings to accommodate the ever growing urban population. However, two dissimilar visions on how sustainable cities should grow exist; one aiming at densification, 'the compact city', and the other advocating for low density through 'green suburbia'. The question is: for each case - low and high density - what is the most efficient strategy for reducing carbon emissions? This study analyses the interrelationships between different urban configuration patterns and the viability of implementing renewable sourced Distributed Energy Resources (DER). Furthermore, the identification of these links will help assess the impact that building and planning regulations have on the potential for on-site energy generation. The research uses quantitative methods for analysing case studies from existing cities, based on remote sensing data and GIS for the extraction of urban descriptors at the district level, as well as computational tools for the simulation of renewable energy potential. With a transdisciplinary approach on the thresholds between urban design and engineering, this study will provide useful insights for designers and policy makers on the best paths for achieving energy efficient built environments.

Processes of Technological Niche Creation: the case of off grid renewable energy rural electrification in Chile

José Opazo

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This article shows some results from a review of the rural electrification programme with renewable energy technology implemented by the Government of Chile from the beginning of 2000 until 2008, which constitutes the empirical base for a doctoral research project on diffusion and adoption of off-grid renewable energy technologies in rural areas of developing countries. The Chilean electrification programme has supported the development of institutional, social, economic and technical processes representing structural changes that affect development and integration opportunities for poor rural communities through the removal of barriers for the use of renewable energy, the setting up of institutional conditions to develop a market for these technologies and the promotion of public and private investments. The review of the programme aimed at understanding the reasons behind the successes and problems faced during the implementation phase. Its principal focus has been on the analysis of institutional and decision making processes, in order to inform further development of public policy in the area. From that starting point, the research will analyse government-led rural electrification programmes implemented in rural Chile and Brazil during the last 15 years. The research attempts to advance the understanding of energy technology diffusion and adoption by rural users underpinning development processes. In that sense, the main objective of the project is to investigate how socio-technical niches for off-grid renewable energy can emerge in contexts of poverty and in which low technological capabilities can be found. Technological diffusion and adoption is understood not only as a process by which artefacts are made available to final users as consumer products but as a process by which technologies embed and are embedded in socio-technical practices. These practices are defined by the mutual interaction of a broad set of actors including final users, technicians, public authorities and public servants, technology developers and providers, consultants and intermediaries, financiers, and a number of organisations (firms, Gov. agencies, regulators, NGOs) interacting in the process of developing, implementing, operating and maintaining technologies. From a theoretical perspective, this research will explore how applicable are strategic niche management approaches for diffusion and adoption of renewable technology for rural electrification in developing country contexts. From an empirical perspective, this project will analyse how institutions have supported the development and implementation of rural electrification projects and how the interaction of these projects, the actors and institutions involved have helped forming technological niches.

Transportation in an energy-constrained world

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Transport is one of the most rapidly growing sectors in terms of activity and energy consumption in the world. Despite the development of alternative transportation systems and more sustainable vehicle technologies, energy use is still raising and climate change gases associated to this activity are also expected to increase.This presentation will describe experiences from several cities around the world, where the issue of transportation has been approached, including vehicle activity, fuel consumption and emissions of both local and global pollutants.The need for adopting common methodologies in order to estimate energy use and emissions will be discussed, in particular for developing economies from Latin America and Africa. A brief review of new approaches oriented to a more sustainable transport system will close the presentation.

Evaluation of microalgae production for biodiesel generation in Chile

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Nowadays the major challenge in our planet is to increase the use of renewable energy, especially for CO2 mitigation in order to avoid the impact on climate change and due the decline in fossil fuel production. In Chile the dependency on non-renewable energy is obvious, and the expansion, research and development of renewable energy is beginning. Regard to biofuels, currently in Chile they are developing three project among the government, universities and private company in order to produce neutral lipids for biodiesel production (microalgae) and carbohydrates for bioetanol production (seaweed). Microalgae are microscopic heterotrophic -autotrophic photosynthesizing organism that inhabit many different types of environments, including freshwater, brackishwater, and seawater. Microalgae lipids, seems to be a sustainable source for oil production, and one of the best alternative with a high feasibility for second generation biofuels [1] or to produce molecules with high economic value. [2] Until this day the use microalgae as a potential source of biomass has been centrated in those algae that are know in terms of: growth, biomass production, biochemical composition, etc. Specially the green algae group. In our work we study news strains of microalgae the dinoflagellates and raphydophytes that are a big group of microalgae that are knowing for producing huge and extends algae bloom in many different places for all over the world. We determine that some algae of this group had the capacity to produce biomass and high quantity and quality of neutral lipids. [3] The aim of this work is to evaluate the potential use of microalgae for biodiesel generation in Chile, to determine which algae appear as the best strain for biomass and lipids production depending on the local conditions and to characterize the potential location to establish industrial scale production of microalgal biomass.Keywords: Biodiesel, energy, microalgae, dinoflagellates, lipids.

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What domestication missed: exploiting wild emmer to improve wheat

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Wild emmer wheat (Triticum turgidum ssp. dicoccoides ; DIC) has long been recognized as a potential source of valuable alleles for a series of important agronomic traits in wheat. We have recently isolated two such genes from wild emmer through positional cloning. Gpc-B1 is a NAC transcription factor that improves the efficiency of mineral remobilization from senescing leaves to grains. The wild emmer allele accelerates senescence by 2-3 days and increases grain N, Zn and Fe concentration by 10-15%. Closely linked to Gpc-B1 (0.3 cM) we identified Yr36 , a gene that confers non race-specific or partial resistance to Puccinia striiformis f. sp. tritici (PST), the yellow rust pathogen. This gene encodes a kinase-START domain protein, representing a novel gene architecture, and its resistance was shown to be temperature dependant. Both Gpc-B1 and Yr36 are either non-functional or deleted in all cultivated durum and bread wheat varieties. However, backcross introgressions of the DIC segment including Gpc-B1 and Yr36 confers consistent increases in grain protein and micronutrient concentration in tetraploid and hexaploid wheat varieties as well as improving resistance to PST in susceptible cultivars. This suggests that the Gpc-B1 and Yr36 wild emmer alleles have the potential to contribute to the improvement of wheat nutritional value and yellow rust resistance in a wide range of germplasm. Overall, our work with emmer argues for the importance of using wild species to discover and recover valuable alleles for modern agriculture. This will become increasingly important as we face new challenges to secure a sustainable intensification of our agricultural systems.

Patents & Scientists

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Since recent years, it becomes more and more important that scientists consider patenting their inventions. Nevertheless, many of them are still unaware concerning what, when and how to patent. This lecture is intended to provide an insight into the field of patents. It will address what in the field of life sciences is patentable and which prerequisites are to be considered.

Structural biology of hydrogen and carbon monoxide metabolism and its connection to the origin of life

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Hydrogenases are oxygen-sensitive enzymes present in many microorganisms where they catalyze the oxidation of molecular hydrogen or the reduction of protons according to the following reaction: H2 = 2H+ + 2e-. Because of their complexity, hydrogenases require maturation machineries that involve metal ion transport, synthesis of CN- and CO, formation and insertion of a FeCO(CN-)2, Fe2(CO)2(CN-)2 or Fe(CO)2 unit in the apo form, synthesis of a small dithiolate-containing molecule (FeFe-hydrogenase) or insertion of nickel and proteolytic cleavage of a C-terminal stretch (NiFe-hydrogenase). Since the active sites of these hydrogenases are buried in the structure, electron and proton transfers and gas tunnels are required between these sites and the molecular surface. Understanding these processes is of bio-technological interest for the H2 production by photosynthetic organisms and the design of bio-fuel cells. The bifunctional enzyme CO dehydrogenase/Acetyl-Coenzyme A synthase forms an acetyl group from CO (obtained by reduction of CO2) and a -CH3 group (obtained by reduction of a second CO2). This process may represent one of the oldest ways of fixing carbon. Like in one of the hydrogenases, both active sites contain nickel and iron. The similarity between the metal clusters found in these enzymes and inorganic nickel and iron sulfides (1) has prompted several authors to postulate an "iron-sulfur" world as a pre-biotic setting for the origin of metabolism (2,3). These ideas will be discussed during my talk.

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RNAi, the key player in antiviral response in insects

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The term RNA interference (RNAi) or RNA silencing encompasses a type of gene silencing mechanism conserved among various species from different kingdoms (fungi, animals and plants). During RNA silencing, a small RNA molecule directs the specific regulation of a corresponding RNA target.RNAi-related pathways have roles in many, different aspects of cell life, ranging from gene expression, epigenetic modification and regulation of heterochromatin, and resistance to pathogens. A common characteristic of these pathways is their dependence on sequence specific binding between the small RNA and the target RNA sequence. One of these pathways, the small interfering RNA (siRNA) pathway, is mainly involved in the defense against parasitic nucleic acids: transposons and viruses. Indeed, in insects, the siRNA pathway is the major antiviral response. Many insects act as vectors for an increasing number of emerging human viral diseases. A mastery of the insect immune system and antiviral response could lead to a better control over the transmission of disease. In fact, many insect viruses develop a persistent infection during which cells are infected and produce viral particles, yet without clear signs of infection. In this context a key question is how viruses establish a persistent infection in insects. To understand this complex host-pathogen interaction, we are using a safe and powerful model D. melanogaster and a set of (+) strand RNA viruses. Using high throughput sequencing we have showed that the establishment and maintenance of persistance is regulated through diverse / multiple RNAi pathways in insects. These and other results will be discussed.

Synthetic Biology and iGEM: a novel approach to biotechnology and education

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Synthetic Biology (SB) is an emergent discipline that seeks to engineer Biology by applying principles from the Engineering doctrine. Standardization, modular design, decoupling and abstraction principles are used to design highly scalable, predictable and robust biological systems with novel functions. These principles can energize biotechnology in the same way that computer manufacturing has been propelled forward since the invention of the first transistor.

iGEM, the international Genetically Engineered Machine competition, has successfully proven the potential of SB. iGEM is a SB contest held in the spirit of robotics competitions in engineering fields, except that the students use biological parts ("BioBricks"). Interdisciplinary teams of undergraduate students face the challenge of designing and implementing a synthetic biological system using standardized and interchangeable BioBricks from an open-source library (Registry of Parts). Every project is presented and judged at the iGEM jamboree in MIT (Massachusetts, US). Our group coordinates iGEM teams and a crash course in SB at Cambridge University. We believe that cheaper and more powerful educational platforms can be developed in Latin America based on open-source resources and technologies being developed in SB and iGEM. We have generated a new set of open-source tools to: i) turn-on genetic circuits in a single cell within a living organ, ii) quantitatively measure multiple gene expression and cell growth in vivo through a highly-automated approach, iii) standardize BioBricks in living plants, iv) trigger cell-cell interaction with artificial diffusible transcription activators, and v) activate multiple genes within discrete domains. We are using these tools to engineer artificial mutualism between a plant (Arabidopsis thaliana) and soil microbe (Bacillus subtilis). This project, entitled "The Programmable Rhizosphere", is focused on how cellular circuits in organisms, such as microbes and plants, can be designed to self-organize, break symmetry and interact with other organisms in a reliable manner. We are developing these circuits as modules that can be defined by I/O dynamics and executed in a hierarchical cascade. This will allow us to test and characterize each module separately and ease the mathematical modelling of the cellular interactions. A modular organization would also permit more flexibility in the applications of the system. For instance, the modules in charge of self-organization and communication can be repeatedly used whereas those used for interfacing with soil, receiving inputs or conducting tasks can be changed in order to give new applications to the artificial mutualism. This approach could lead to a highly scalable and cost-effective biotechnology.

The ABC's of MHC: What are major histocompatibility complex genes and why are they relevant in the study of ecology, evolution and behaviour?

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Revealing the low energy frontier of Particle Physics

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We are entering exciting times in Particle Physics. The Large Hadron Collider is setting a new landmark at the high energy frontier, probing the structure of matter and space. However, recent hints from astrophysical and terrestrial experiments show us that there is still unknown and unexplored territory in the low energy frontier of Particle Physics.In this talk I will motivate the search for very light particles - surprisingly non-famous - but crucial to the physics "below" the Standard Model.

Zernike polynomials and its Applications

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Zernike polynomials (ZP) are widely used in optics because they form a completeorthogonal basis able to represent any function on a circular support of unit radius[1]. In particular the ZP expansion is the standard way to represent wavefrontspropagating through circular apertures [2]. The radial n and angular m orders of eachZernike polynomial m,n Z have a clear physical meaning as they determine the mode of the wave aberration (tilt, defocus, astigmatism, coma, trefoil, spherical aberration, etc.) The problem is that these nice properties do not hold in most practical situations, in optical testing, computing or design where one has to work with a limited number of discrete samples. For most sampling patterns (square, hexagonal, polar, hexapolar, etc.) the sampled ZPs are neither complete nor orthogonal. Consequently the ZP expansion is not invertible for discrete (sampled) signals. The standard way to estimate the coefficients of the expansion is by least squares fitting, but this requires having more samples (I) than modes (J), with I >> J typically. This oversampling can be costly (in adaptive optics), and precludes therecovery of the original data points from the expansion coefficients. This can also be a serious drawback in iterative computations or optimization problems. Here we propose and implement a method to obtain invertible (complete and orthonormal) discrete Zernike transform, DZT. Sampling is of crucial importance tohave a complete representation of the signal (sampling theorem in the Discrete Fourier Transform). In an empirical analysis we found that a necessary condition for completeness was to have a non-redundant sampling pattern (coordinates). Among them, the Fermat spiral, a rolled 1D pattern to cover a 2D circular area, is a particularly interesting case.Once completeness is guaranteed, then we can obtain an orthonormal basis, usingthe Gram-Schmidt or equivalent method. In this way, the ZP expansion matrix (columns are the samples of ZPs) is decomposed as Z = QR; where is the new Q basis in the discrete domain and R is the basis change operator. The two importantproperties is that Q is square (I=J) and that Q-1 = QT. This warrantees that the representation is invertible: completeness implies that Z has an inverse, but the inversion can be ill-conditioned.References[1] V. N. Mahajan, in Optical Shop Testing, 3rd ed., D. Malacara, ed. (Wiley, NewYork, 2007).[2] J.Y.Wang and D.E.Silva, Appl. Opt. 19, 1510-1518 (1980).Work supported by CICYT grant FIS2008-00697. R. Rivera acknowledges support by Alban scholarship E07D402088CL.

Seasonal and interannual variability of sea surface temperature around the South Shetland Islands. The Bransfield Current as a gravity current

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The physical conditions in the area surrounding the archipelago of the South Shetlands Islands are very different between the North side (Drake Passage) and South side (Bransfield Strait) of the Shetland Islands. Whereas in the North the Antarctic circumpolar system influence is very important, in the South side, both the Weddell and Bellinghausen seas play an important role in the Bransfield system. With hydrographic data from NODC and CIEMAR 99/00 and BREDDIES 02/03 cruises, and SST from satellite images from AMRS-E, we find a great variability throughout the study period, with a marked seasonal variation. In summer, all the structures appears clearly and, although this behavior occurs during in a few months, but in late autumn, winter and early spring, it was observed the influence of the formation and melting of the ice shelf, having an almost uniform surface, their variation is so important that it affects the average of SST in the whole area of study. It is shown that the frontal structures that arise in the area around the South Shetland Islands are dominant structures in the system and the mesoescala structures respond to change of position of ACC system in time and space. Moreover the SST distribution show pattern coherent with the behavior of Bransfield Current as a gravity current

Anyons and supersymmetry

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A general discussion on the properties of the configuration space of particles in the plane are explained, and shown hence that it is possible the existence of particles with fractional spin, which are neither bosons nor fermions, called "Anyons". We describe them by introducing relativistic system of equations, which generalize the Dirac equation of the spin 1/2 particle. Furthermore, we extend the system to describe a system of supersymmetric anyons.

Web Mining or The Wisdom of the Crowds

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The Web continues to grow and evolve very fast, changing our daily lives.This activity represents the collaborative work of the millions ofinstitutions and people that contribute content to the Web as well asthe one billion people that use it. In this ocean of hyperlinkeddata there is explicit and implicit information and knowledge. Web Mining is the task of analyzing this data and extracting information andknowledge for many different purposes. The data comesin three main flavors: content (text, images, etc.),structure (hyperlinks) and usage (navigation, queries, etc.), implyingdifferent techniques such as text, graph or log mining. Each case reflectsthe wisdom of some group of people that can be used to make the Web better.For example, user generated tags in Web 2.0 sites.In this talk we walk through this process and give specific examples.

Load Forecasting: From University Research to Corporate Analysis

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For several years, I have worked in the problem of electric load forecasting both in academia and industry. In this talk I will give a view on the major challenges and results from the work I performed during my research years in the K.U.Leuven, namely, the implementation of machine-learning (kernel methods). Then I will explain the work I am currently performing in GDF SUEZ, related to several analyses linked energy consumption worldwide.The talk will cover not only methodological issues, but also invite a discussion about working in academia / industry and the difference/challenges therein.

Sustainable social strategies for technology transfer

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This study reflects on the challenges and risks implied in the transfer of methods, systems and technologies between different contexts and its assimilation from a productive and social point of view, within a globalised and unbalanced world, which we are currently living at. The study is focused from an architectural point of view, specifically in the identification of degrees of adaptation needed to warrantee that the transfer of constructive and energy efficient systems are sustainable in time, considering the permanent influence that external stylistic models has had in contemporary Chilean architecture, specially after natural catastrophes. The impact of such actions is not only assessed through technical and economical terms, but also through its socio-cultural impact, as without this approach, its sustainability won't be fully established. Case studies are used as examples and strategy actions are recommended to consider in new initiatives for the different scenarios in which that may occur.

Youth, Communication and Social Change

Negotiating, Navigating and Narrating Youth Lives in a Glocal Reality

Thomas Tufte

In our mediated and globalized world of today, how are young people negotiating identities and social relations? How do they use media and engage in communication, and for what purposes? How do young people engage with the development processes and challenges in the world? While 'youth' is a socially constructed conception of age and not just a biological given, this presentation will contextualize the ways in which and means with which youth engage in the world via media and communication. Based on my qualitative research experiences from Africa, Europe and Latin America, I seek to identify and explore some of the multiple dimensions of youth agency in their meeting with and uses of both new social media and more traditional media formats. My current research on youth, communication and social change in Tanzania in East Africa will be highlighted.

In discussing youth agency in the intersection between citizenship, social change, consumption and performance I outline three main analytical perspectives upon the way youth both negotiate, navigate and narrate their identities, experiences and social actions: consuming youth; performing youth and insurgent youth.

Pre-linguistic signs as tools for regulation in Adult-Child interactions

Marisol Basilio

Universidad Autonóma de Madrid

Her thesis research is focused on early development and promotion of self-regulatory skills. Her approach, applies Vygotsky's ideas of this progress from other to self-regulation to early development. Throughout the educative processes, both formal and informal, infants and toddlers come to acquire and use complex knowledge about the world, communication and others. She focuses in the analysis of pre-linguistic signs as tools for regulation in Adult-Child interactions during practical joint problem solving situations. These skills have demonstrated to be relevant for school success and to have a strong relation with later academic achievement. Ultimately this research will help policy making for Early Years Education and Early Intervention for typically and atypically developing children, bringing together new findings in cognitive development.

Rethinking gender from the south

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A theoretical exploration of "southern theorists", with special focuson their contribution to rethinking, challenging and expanding western conceptualizations of gender will be presented. Taking southern contributions seriously is motivated by a particular understanding of gender, as impossible to grasp and define in any transhistorical or unitary way. The aim is to identify scholarship that promotes decolonizing and liberatory ways of constructing gender. Hegemonic knowledge production in social sciences and gender theorizations will be criticised with a special focus on Eurocentric knowledge and its consequences. The south as a location from where to think will not be reduced to concrete geographical locations, but will refer to epistemological locations as well. The focus will be on authors and historical analyses from Latin America and particularly Chile. Postcolonial understandings of gender constitutions developed by Latin American scholars will be of special interest.

How does a foreign student become or not an immigrant? Exploring the social trajectories of Latin-Americans postgraduate students in France and US

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Based on comprehensive interviews with Chilean and Colombian students in France and United States, this paper explores the links between social mobility and international mobility using the social trajectory's concept. According to this sociological approach, the transition between a postgraduate student and an international high skilled worker entails a gradual transformation of social identity and brings forward their learning mechanisms in the host society and, simultaneously, the preservation and reproduction of transnational bonds with the host society.

Participation of Doctoral Graduates in Industry Learning Systems in Chile

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In this seminar I will present some preliminary results of my research based on the narratives of eight doctoral graduates whose work trajectories have relation to the copper mining in Chile. I will explore the gap between personal experiences and relevant context by drawing on one particular strategy emerging from the data: a relationship characterised by synergies amongst different kinds of individual interactions. The main research question for the study is: How are the work trajectories of doctoral graduates related to industry learning systems?

Imaginaries of Brand New Nations

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Nation BrandingMore and more is frequent to see states that follow plans that look very much like strategies for product differentiation. For example, within the Tourism Industry, or when competing for hosting Football World Cups, Olympic Games or when organizing World Expo's countries have embarked huge efforts for building powerful abbreviated images for positioning nations as distinct and seductive places for 'consumers-others'. The entire infrastructure built for the Expo Shanghai 2010 or the huge discussions about the costs and quality of the London 2012's logo for the coming Olympics are some examples that illustrate how states have embarked into branding processes of nations while recreating images that show what nations (and the cities that form them) are about. Is the neoliberal global world order affecting the imaginings of nationalism? How are National States building their identity in such a world economic order? This presentation will discuss that National States are re-creating a new style of imagining the Nation, through branding. In a consumer society even Nations have seen the need to Brand themselves and as we may see they post very different messages in order to compete. This presentation will try to post some issues regarding the brand positioning of developing nations and how in them we can find still find issues regarding world social and political inequalities.

Chronic pain: Future treatments

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Pain has been defined by the International Association for the Study of Pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage". Pain is an essential function since it guarantees the integrity of the body. However, pain is a problem when it becomes chronic and persists even after the healing of the initial injury. The prevalence of people suffering from chronic pain is extremely high as it affects millions of people worldwide. Therefore, chronic pain represents a major health problem and an unmet clinical need. The paucity of effective pain control can largely explain the high incidence of chronic pain patient. Poor pain control arises undoubtedly from a deficit in our understanding of the underlying causes of chronic pain and as a consequence the limited analgesic therapies arsenal and efficacy of current treatments. However, in the last decade several advances have been made in the understanding of the physiopathology of chronic pain mainly due to progress in molecular biology and human brain imagery. These techniques have allowed to identify respectively, new targets such as some voltage gated ion channels both in animal and human and the so called "pain matrix" which corresponds to the cerebral structures involved in pain processing. These findings should allow the development of new classes of analgesics by targeting novel processes contributing to clinically relevant pain. After a brief presentation of some mechanisms underlying chronic pain, I will emphasise on several current progress made in the pain field and consequently future treatments for chronic pain.

Chromosome 22 microdeletion syndrome: searching for modifier factors

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Chromosome 22q11.2 microdeletion syndrome (del22q11) is one of the most common genomic disorders in humans, with frequency of 1/4000 to 1/2500. The phenotypic features include congenital anomalies, such as congenital heart disease (CHD), palatal anomalies ranging from cleft palate to velopharyngeal insufficiency, characteristic facial features, hypoparathyroidism and cellular immunodeficiency due to thymic aplasia/hypoplasia, as well as cognitive impairment and increased risk of psychiatric disease. The congenital anomalies result from abnormal formation of structures derived from the 3rd to 5th embryonic pharyngeal arches and branches and have been attributed to haploinsufficiency of the TBX1 gene, located in the deleted region. Most patients share a common deletion in terms of size and location, but the frequency and severity of phenotypic features varies widely, with patients presenting as a newborn with complex CHD to an adult with schizophrenia and no congenital anomalies. The variability suggests the presence of genetic, environmental or stochastic factors that modify the primary effect of the deletion. Our work is focused on characterizing the clinical manifestations of patients with del22q11, and on searching for genetic modifier factors for the presence of CHD, the manifestation associated with highest morbidity and mortality. We have gathered data from over 330 del22q11 Chilean patients, diagnosed from newborn to 40 years of age. CHD was present in 60%. Patients with CHD were diagnosed earlier with del22q11 compared to those without CHD (average 4 months vs. 6 years, respectively) and had higher infant mortality (10% vs. 0%, respectively). We have found no evidence of association of CHD with antenatal folic acid supplementation or with polymorphisms in VEGF, TBX1, folate metabolism genes and the remaining TBX1 copy. We are currently working on genome-wide association strategies to search for modifiers (funded by Fondecyt grants 1061051 and 1100131).

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Electromyographic Activity of the Mandibular and Cervical Muscles during Tooth Clenching and Grinding

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Bruxism is a diurnal or nocturnal parafunctional activity characterized by clenching and/or grinding of the teeth. Electromyographic (EMG) recordings of mandibular and cervical muscles during parafuntional activities are scarce in humans. The aim of this lecture is to discuss EMG pattern of healthy subjects with complete natural dentition, with canine guidance or group function during lateral jaw movements. On an experimental human model, bipolar surface electrodes were located on the left and right anterior temporalis, masseter and sternocleidomastoid muscles. Bilateral EMG activity was recorded during the following conditions: A. eccentric grinding from intercuspal position to the right lateral edge-to-edge contact position; B. clenching in right lateral edge-to-edge contact position; and C. concentric grinding from right lateral edge-to-edge contact position to intercuspal position. EMG pattern observed on the working side and on the nonworking side were different among the muscles studied. EMG activity recorded in the anterior temporalis and sternocleidomastoid muscles, during tooth clenching and/or grinding was lower with canine guidance than with group function ($P<0.05$). In the masseter muscle no differences were observed (mixed model with unstructured covariance matrix). These results give to the clinicians a better understanding of muscular symptoms in anterior temporalis, masseter and sternocleidomastoid muscles, if the subject is doing tooth clenching and/or grinding that exceeds the individual's adaptation capability. Lower EMG activity recorded with canine guidance in the anterior temporalis and sternocleidomastoid muscles suggests a preference of this occlusal scheme as therapeutic treatment.

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Neural synchronization dynamics in human visual perception

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During visual perception, largely distributed neural activity self organizes into coherent perception. It has been proposed that neural synchronization can be an operative factor in this self organization process. Here I will present arguments and show several experiments supporting the participation of neural synchrony in visual perception. I will argue that neural synchrony can be found (a) in very different brain structures, (b) trough a large range of the phylogenetic scale (c) at several levels of neural organization and (d) that it increases the probability of activity propagation. All these characteristics should be present in a mechanism for neural coordination (1). Furthermore, in our experiments, we have found that spike synchrony is present in the visual cortex of monkeys freely viewing natural images 30 to 90 ms after fixation onset. This synchronization is absent when monkeys are looking at a black display (2). In humans Large-Scale Neural Synchrony is present when subjects recognize a face in an ambiguous picture but not when they only see meaningless shapes (3). Large-Scale Neural Synchrony also correlates with conscious visual perception but not with subliminal perception (4). Abnormal visual perception and visual working memory in schizophrenia correlates with reduced Neural Synchronization (5) and lack of synchrony modulation (6) respectively. Finally Neural synchronization increases from childhood to adulthood in a way that parallels the maturation of visual perception (7). Taken together, this evidence supports the participation of neural synchrony in the organization of visual perception.

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Why left is right in speech production

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Lateralized brain function is a fundamental principle in Neuroscience. Patients can lose speech when they suffer from left but not right-hemispheric lesions. Importantly, speech production relies much more on left hemispheric computation than speech perception. Speech production involves transformation of sensory speech representations in motor speech representations, subsequent articulation, and integration of sensory feedback in the motor program. Left-lateralization of speech production is likely due to a left-hemispheric advantage to compute one of these steps. We were able to study the sequence of lateralization in a functional imaging speech production experiment that segregated the intention to speak from later processing steps. We found that the auditory and somatosensory cortices lateralized first, indicating that properties of sensory cortices could bias speech production to the left. The sensory feedback information that is provided by the left auditory cortex could be more informative for integration in a speech motor program than the one that is provided by the right homologue. We thus propose that lateralization of speech production could be the consequence of a functional specialization of left auditory cortex for higher frequencies that code phonological information. To test this prediction in a pathological model we studied the speech production system in a condition that is thought to result from pathological integration of auditory feedback in a speech motor program. This dysfunction was proposed to underlie developmental stuttering. If left-lateralization of speech production was closely tied to sensory feedback integration, we would expect reduced lateralization of speech production in stutterers. As others, we found that this was the case. In addition, we were able to show that the previously shown structural anomaly below the left articulatory motor cortex in stutterers translates into a functional disconnection of articulatory motor cortex from the feedback-providing auditory cortex. Fluency-inducing therapy substantially slows down speech production and thus allows bypassing this structural deficit by functional plasticity involving left prefrontal cortex. Consequently, speech production re-lateralizes to the left. Furthermore, we observed that long-lasting spontaneous recovery from stuttering was associated with efficient sensorimotor mapping due to structural reconstitution of sensorimotor connectivity around the left posterior sylvian fissure. Our data indicate that lateralized information originating in posterior brain regions drive functional lateralization of prefrontal cortex. Hemispheric specialization of sensory cortices could thus be at the origin of lateralized prefrontal functions such as speech production.

HIV/AIDS: Update on PI monotherapy studies

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The HIV/AIDS global pandemic is one of the most important public health problems humanity has faced in recent history. Combination Anti-retroviral therapy (cART) has dramatically changed HIV disease progression rate and consequently has reduced HIV-associated mortality to an impressive minimum.

Studies such as SMART have shown that interruption of treatment increase the risk of both HIV-related and not related complications. Therefore, once started on cART, patients must continue taking treatment for life. In addition, drugs currently in use to treat HIV disease may induce important adverse effects and may have important pharmacological interactions with many other drugs. Therefore, treatment simplification strategies are urgently needed and monotherapy with protease inhibitors is being evaluated in a large MRC randomised clinical trial, PIVOT, as one of them. This non-inferiority trial aims to compare standard cART against treatment with protease inhibitors as single agents in patients who have had undetectable HIV-RNA levels for at least six months while on cART.

Other important questions on HIV treatment would require different approaches. Questions on the ideal time to start cART can only be definitively addressed in a large, international randomised clinical trial such as INSIGHT-START. Questions on specific safety issues, such as drug toxicities may require large, multinational, observational cohorts such al EUROSIDA, DAD or the Latin American Cohort LATINA. Regional multinational studies can also be extremely useful to answer specific questions on co-morbidities or other environmental factors or to assess the impact of certain health policies.

HIV/AIDS is a global public health problem where multinational and regional studies are required to answer critically important questions. Finally, because of its demographic and geographic characteristics as well as its experience on HIV treatment, the contribution of the Latin American sub-continent to the scientific knowledge in the field might be extremely important.

The use of genomics to maintain the competitiveness of the Chilean fruit industry

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Chilean economy is largely based on its natural resources. Among them, the fruit industry has been continuously expanding; however, its competitiveness is in danger due to the lack of varieties that respond to the needs of the Chilean industry. The fruit from Chile has to reach markets that are far away, therefore in addition to a high quality, the fruit from Chile has to be able to travel long distances and maintain its quality for several weeks in the cold. Breeding programs are essential to obtain new varieties with high quality and an extended postharvest life. Genomics emerge as a way to generate tools that can assist the breeding in order to accelerate and optimize the selection of new varieties. A combined effort between scientists (breeders, postharvest physiologists, molecular biologists, computational biologists and geneticists) and the fruit industry has been created. An example of the work done in peaches and nectarines will be discussed at this talk. The results suggest that certain genes and proteins are linked to physiological disorders caused by cold storage and can be eventually used as markers for the identification of new varieties.

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Chilean-German Scientific Cooperation and programs of the German Research Foundation DFG

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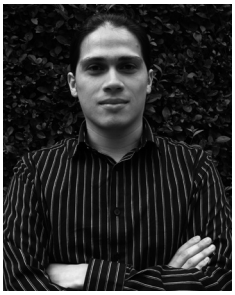
The Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) is the central self-governing research funding organization in Germany. It serves all branches of science and the humanities by funding research project at universities and other research institutions. The DFG promotes excellence by selecting the best research projects on a competitive basis and actively encourages international research cooperation. It is particularly dedicated to the promotion of young researchers. It endeavors to ensure equal opportunities in research and advises parliaments and public authorities on questions relating to science and research. The DFG offers a wide range of funding programs, which have been developed in order to meet the needs of all scientific disciplines. The DFG promotes international cooperation between researchers and scientists within all of its funding programs. International research collaborations may be funded either as part of individual projects or in the context of coordinated programmes. In addition, in order to establish or enhance bilateral cooperation the DFG offers a modularly structured funding scheme including preparatory and bilateral events. Furthermore, two specific programs address scientific cooperation between Germany and Chile in the frame of agreements between DFG and Conicyt. The academic exchange program Conicyt-DFG fosters consultory visits up to three month (open call 2010: http://www.conicyt.cl/573/article-36917.html, deadline 23.8.2010). For the first time a call was opened to support joint research projects and to strengthen structured groups in research areas of excellence in the frame of the Conicyt Associative Research Program (PIA), in the areas "genetic and molecular basis of human disease", "astronomy/astrophysic" and "geology/seismology" (open call 2010: http://www.conicyt.cl/573/article-36913.html, deadline 30.9.2010). Further information:DFG, Germany: Dr. Dietrich Halm, Director International Affairs, Latin America, dietrich.halm-dfg.de, Tel: 0049-228-885-2490 Contact in Chile: Dr. G. Kausel, Academic Representative DFG, gkausel-uach.cl, gkausel-gmail.com, Tel: 0056-9-81377852

A transatlantic knowledge transfer network

Mark Anderson

The KICKSTART (www.alfa-kickstart.org) project tackles the complex but increasingly relevant issue of international innovation by developing a network for academic entrepreneurship and knowledge transfer through a consortium of nine higher education institutions, from Latin America (Colombia, Mexico, Peru, Bolivia, Chile and Argentina) and Europe (Spain, Germany and UK). The first phase of the project culminated in a series of web-streamed workshops, an innovation competition, researcher exchange programme and textbook. Funded by the EC's ALFA Programme, the project has secured a further 1m euros for a second phase which aims to strengthen and expand the network, involving local stakeholders and setting up three one-year innovation support programmes in Bolivia, Colombia and Peru. The project will culminate in an international master's programme for innovation.



Exploring socio-psychological variables underlying the acceptance or opposition towards proposed new power plants in Chile

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The socio-economic growth of Chile has resulted in increasing demands for electricity coming from society and industry. However, in the last decade, problems in the supply of natural gas and severe climate variations have generated power shortages. To tackle these issues, the government has indicated the need to construct several power stations, utilizing a variety of energy sources (hydro, wind, coal, gas, and potentially nuclear in some future). Some of these plants imply the use of large areas of territory and threaten to produce a number of negative environmental impacts. These implications are at present courting much controversy and are motivating substantial debate, opposition and resistance from different kinds of political, environmental, and ethnic-related groups.A vast body of research has suggested that the opinions and reactions to these kinds of industrial developments, far from being purely formed on the basis of technical arguments, are strongly influenced by variables in the socio-psychological level (e.g. Fischhoff, Slovic, Lichtenstein, Read, & Combs, 1978). These are often underestimated and misunderstood by governments and industry in their planning stages, and are not properly addressed in the public policy formulation (e.g..Bell, 2005; Devine-Wright, 2005).To explain some public responses to risky events, the "social amplification of risk framework", (Kasperson, Kasperson, Pidgeon, & Slovic, 2003) suggests that messages of risks and benefits related to hazards or technologies, are amplified or dampened as they pass through different levels of social stations, such as groups to which individuals belong to. The proposed research will examine how the public perceptions towards these types of industrial developments could be understood, in part, by cognitive and social group processes, as those described in the "social identity theory approach" (Tajfel & Turner, 1979; Hogg & Abrams, 1988). Some implications for policy formulation and planning will be discussed.

Labour Market Participation and Pension Incentives

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This study aims to estimate the impact of the 2008 Chilean pension reform on the Chilean labour market participation. During 2008 Chile reformed its Defined Contribution Pension System, widening the first and improving the second tier. The main goals of the reform were to guarantee a minimum level of consumption upon retirement, prevent old-age poverty and reduce gender inequalities. The reform ensures old-age income to individuals that have not saved enough to self-finance a minimum level of consumption and promotes labour market participation, in particular among groups whose attachment has been traditionally infrequent or irregular, such as women, the self-employed and young people. We use a difference in difference estimator to address the effect of the expected pension wealth and pension on the formal labour market participation. We exploit the differential effects of the reform on individuals belonging to several year-of-birth cohorts and different groups to gain identification.

Linking researchers and graduate students abroad with research centers in Chile

Jani Brouwer

Jani Brouwer has a Master of Science Degree in Education from the University of Amsterdam, Holland. Between 2006 and 2007 she served as Coordinator of Scholarships for the International Fellowship Program at CONICYT. From January 2008 to December 2009, Mrs. Brouwer was responsible for coordinating CONICYT´s Basal Financing Program for Centers of Scientific and Technological Excellence. She has also worked for Fundación Andes as a Deputy Program Manager in charge of the scholarships and grants in the areas of Education, Science, Culture and Social Development. She is currently the Director of Advanced Human Capital Program of CONICYT.

An agile and participatory approach to creating and leading multidisciplinary teams and projects

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In today's globalized knowledge-based world, collaboration plays a major role in the success of any kind of organization or enterprise - in society, in science, in business, in academia, etc. The ability to lead people in their work and properly organize their contributions has become one of the key skills of any professional willing to achieve and sustain success. In many situations - such as multidisciplinary global research initiatives, joint-ventures or innovations projects - the value of effectively creating, connecting and managing the synergies resulting from collaborations are at least as important, if not more, than the individual contributions themselves.The practices of multi-disciplinary team development and project leadership are of enormous value, especially considering the rapid pace of change and learning expected, as well as demanded from any professional today. Understanding synergies as a key behaviour of any humans system is critical to define the expectations of a high-performing workgroup and creating the necessary conditions for agile and lasting success. Participants will learn some principles and key practices to effectively creating successful multidisciplinary projects, agile teams and knowledge-rich communities. Through a presentation and dialogues they will experience an approach to identifying synergies, shared values and related opportunities. Information and ideas will be shared about a holistic approach to define and implement projects that effectively deliver on expected results through agile teams. Participants will be able to explore the challenges and opportunities of applying these practices to creating and sustaining a professional community. At the end, they will be motivated to continue learning and sharing, enriched by a quick-glance of an extensive body of knowledge, their diverse backgrounds and expertise.Topics:- A brief personal story about learning and change- Defining synergies in a 'flat world': a reflexion on humans systems- Foundational principles for creating and leading effective teams- Knowledge-intensive projects and the role of diversity.- The role of models and metaphors in acting, learning and change- A multidisciplinary and participative approach to success - A dialogue about the process of appreciation to define an effective team- Defining execution agility: from strategy to valued results- Key practices for leading knowledge-intensive projects- Innovation and value creation through collaboration- The business-case of communities of practice, interest and competence- Creating and sustaining a professional community- More questions & answers...- Conclusions and Lessons (2B) Learned- Additional references & information, recommended readings

Workshop on Scientific Publishing

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The format of the Workshop will be that each one of the Editor's will gives a 15-minute long talk about their tips to young researchers on how to get published in their journals and to give one or two interesting cases that they have had and that they regard as emblematic. This will followed by a 30 minutes Q&A session. In addition, the workshop will be broadcasted live to the cyberspace via Nature's virtual platform in SecondLife in order for it to be seen by researchers who are elsewhere and cannot attend the conference.

Integrating Chilean Research Worldwide

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