

International Gap Junction Conference

Valparaíso 2015

March 28th - April 2nd



CENTRO INTERDISCIPLINARIO DE
Neurociencia de
Valparaíso





**International
Gap Junction
Conference**

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International Gap Junction Conference

The International Gap Junction Conference (IGJC) is a unique interdisciplinary scientific meeting that brings together scientists studying connexins, pannexins and innexins.

This conference is the most important international meeting in the field of connexins, pannexins and innexins and attracts scientists from all over the world. The meeting is a great venue to facilitate discussion of the latest advances in the field as well as scientific interactions between young and senior investigators of all different nationalities. It will be held in South America for the first time since its inception in 1983.

Presentations include sessions focusing on the roles of connexins, pannexins and innexins in development, normal physiology and pathological conditions and on the use of these proteins as conduits and targets for therapy of diseases.

Organizing Committee

Juan Carlos Sáez

Pontificia Universidad Católica de Chile and Centro Interdisciplinario de Neurociencia de Valparaíso, Chile

Viviana M. Berthoud

University of Chicago, USA

Agustín Martínez

Universidad de Valparaíso and Centro Interdisciplinario de Neurociencia de Valparaíso, Chile

María Dagli

Universidade de São Paulo, Brazil

Scientific Committee

Anaclet Ngezahayo

Leibniz University Hannover, Germany

Donglin Bai

The University of Western Ontario, Canada

E. Martha Pérez Armendariz

Universidad Nacional Autónoma de México, México

Fabio Mammano

Venetian Institute of Molecular Medicine, Italy

Jean X. Jiang

University of Texas Health Science Center at San Antonio, USA

Lilian I. Plotkin

Indiana University School of Medicine, USA

Mathieu Vinken

Free University Brussels, Belgium

Matthias Falk

Lehigh University, USA

Sandra A. Murray

University of Pittsburgh, USA

PROGRAM

Saturday March 28th, 2015

Morning

Transportation from Santiago's airport to Valparaíso.

Buses associated with the conference will be waiting at the airport to bring the attendees to the hotels.

14:00-17:00

Registration

17:00-18:00

Opening lecture at Parque Cultural de Valparaíso

Eric C. Beyer: History of cell-cell communication channels: "Connexins in the molecular era and beyond"

18:30-20:00

Visit Baburizza Museum at Paseo Yugoslavo

20:00

Welcome Reception and Dinner at Baburizza Museum.

Sunday March 29th, 2015

9:00-10:00

Keynote talk 1

Tomás Pérez-Acle: "Structure-function relationships coded at the molecular architecture of Cx26 hemichannels"

10:00-11:00

Platform session 1

Structural and biophysical aspects of hemichannels and gap junction channels (I)

Chair: Donglin Bai and Jorge E. Contreras

- 1) The first transmembrane segment of connexins and voltage-dependent gating regulation of hemichannels. Bernardo Pinto-**Chile.**
- 2) Cx43 mutant expressing fibroblasts from oculodentodigital dysplasia patients exhibit diverse properties that predict variability in wound healing. John Kelly - **Canada**
- 3) GJCs make-up in function of accurate ratios of Cx40/Cx43 and Cx43/Cx45. Thomas Desplantez-**France.**
- 4) Cx43 channel gating: evaluating triggers and mechanisms. Jose Ek-Vitorin-**USA.**

11:00-11:30

Coffee break

11:30-12:30

Platform session 2

Structural and biophysical aspects of hemichannels and gap junction channels (II)

Chair: Janis M. Burt and Virginijus Valiunas

- 5) Motifs in the permeation pathways of connexin channels that mediate Ca^{2+} sensing. Jorge E. Contreras-**USA.**

- 6) Engineered Cx40 variants showed heterotypic colocalization and increased gap junctional coupling with Cx43. Donglin Bai-**Canada**.
- 7) Differential properties of N14K and N14Y KID mutant hemichannels: structure-function implications. Vytautas Verselis-**USA**.
- 8) The SH3-binding domain controls the activity of Cx43 hemichannels. Jegan Iyyathurai-**Belgium**.

12:30-14:00

Lunch at Parque Cultural de Valparaíso (PCdV)

14:00-15:00

Keynote talk 2

Alberto Pereda: "Properties and plasticity of synaptic transmission mediated by gap junctions in the vertebrate brain"

15:00-16:00

Platform session 3

Principles and cell biology of electrical synapses

Chair: Vytautas K. Verselis and Thomas Desplantez

- 9) Electrical synapses: First principles last or some things never change. Michael V.L. Bennett-**USA**.
- 10) Modulation of the IH current enhances coincidence detection between electrically coupled neurons of the mesencephalic trigeminal (MesV) nucleus of the rat. Sebastian Curti-**Uruguay**.
- 11) Mechanisms underlying plasticity of electrical synapses in the thalamic reticular nucleus. Julie Haas-**USA**.
- 12) Calcium signaling at Cx36 gap junctions in cultured cells and retinal neurons. John O'Brien-**USA**.

16:00-16:30

Coffee break

16:30-17:30**Platform session 4****Pannexin channels in the nervous system**

- 13)** A non-canonical signaling modality for NMDA receptors and Pannexin 1 in ischemia. Nicholas Weilinger-**Canada.**
- 14)** Pannexin 1 sets the threshold of excitatory synaptic plasticity in the hippocampus from adult mice. Alvaro Ardiles-**Chile.**
- 15)** A novel interaction between Pannexin 1 and Collapsin Response Mediator Protein 2 regulates neuronal development. Leigh Wicki-Stordeur-**Canada.**
- 16)** Pannexin 1 activation is required to NMDAR and P2X₇R signaling of the nociceptive information in the spinal cord of neuropathic rats. David Bravo-**Chile.**

17:30-19:30**Poster session I****19:30**

Please find your preferred dinner at Valparaíso's restaurants. Information about restaurants will be available at the meeting.

Monday March 30th, 2015

9:00-10:00

Keynote talk 3

Eduardo Macagno: "Roles of innexins in nervous system development"

10:00-11:00

Platform session 5

Innexin, connexin and pannexin based-channels

Chair: Michael V.L. Bennett and John O'Brien

- 17)** A different role for Innexin2 and Innexin3 proteins from *Spodopteralitura litura* in apoptosis under hemichannel-closed Sf9 cells infected by recombinant baculoviruses. Kaijun Luo-**China.**
- 18)** Comparing innexin- and connexin-based channels using structure-function analysis. Martha Skerrett-**USA.**
- 19)** ATP-evoked internalization of Pannexin 1 channels. Andrew Boyce-**Canada.**
- 20)** Lack of Pannexin 1 alters permeability of cochlear supporting cells and induces sensorineural hearing loss. Pavel Prado-**Chile.**

11:00-11:30

Coffee break

11:30-12:30

Platform session 6

Pannexin based-channels

Chair: Jean X. Jiang and Anaclet Ngezahayo

- 21)** Human development disorders linked to a germ-line missense *PANX1* gene mutation. Dale Laird-**Canada.**

- 22)** Pannexin 1 in smooth muscle cells of cerebral arteries can alter cerebral blood flow and response to ischemic stroke via regulation of myogenic tone. Miranda Good-**USA**.
- 23)** Pannexin 1 in the response of developing neurons to stroke. Leigh Anne Swayne-**Canada**
- 24)** α 1-adrenergic receptor activation phosphorylates Pannexin1 at tyrosine 198 via src family kinases. Leon DeLalio-**USA**.

12:30-14:00

Lunch at Parque Cultural de Valparaíso (PCdV)

14:00-15:00

Platform session 7

Regulation and traffic of hemichannels and gap junction channels (I)

Chair: Matthias Falk and Mathieu Vinken

- 25)** Prevention of Cx37 de-phosphorylation at tyrosine 332 is pivotal for the inhibitory NO effect on GJC. Petra Kameritsch-**Germany**.
- 26)** Control of astrocyte calcium signaling through NO-dependent regulation of hemichannel opening. Mariela Puebla-**Chile**.
- 27)** Cx43 hemichannels in ventricular cardiomyocytes can be activated by an elevation of cytoplasmic Ca^{2+} and are a potential arrhythmogenic substrate in the heart. Luc Leybaert-**Belgium**.
- 28)** Ca^{2+} /calmodulin regulation of connexin. Jenny Yang-**USA**.

15:00-15:30

Coffee break

15:30-16:30

Platform session 8

Regulation and traffic of hemichannels and gap junction channels (II)

Chair: Sandra A. Murray and Jonathan M. Gibbins

- 29) Regulation of gap junction channels and hemichannels by actin cytoskeleton and RhoA. Oscar Jara-**Chile.**
- 30) Hierarchical phosphorylation events in the Connexin 43 tail-domain signal gap junction internalization. Matthias Falk-**USA.**
- 31) Cx43 augments filopodia formation via activation of p21-activated protein kinase 1 (PAK1). Kristin Pogoda-**Germany.**
- 32) Signals and mechanisms regulating endocytosis across the connexin protein family. Charles Fisher-**USA.**

16:30- 18:30

Poster session II

18:30

Please find your preferred dinner at Valparaiso's restaurants. Information about restaurants will be available at the meeting.

Tuesday March 31st, 2015

9:00-10:00

Platform session 9

Peripheral diseases, inflammation-regeneration and cell-cell communication

Chair: Luc Leybaert and Christian C. Naus

- 33) Molecular characterization of gap junction mediated intercellular communication in platelets. Jon Gibbins-**UK.**
- 34) Pannexin 1 channels regulate leukocyte emigration through the venous endothelium during acute inflammation. Alexander Lohman-**USA.**
- 35) The cytoplasmic tail of Connexin43 mediates cytoskeletal rearrangements in B-lymphocytes. Linda Matsuuchi-**Canada**
- 36) Cx43 scaffolding CT intracellular domain is required for achieving proper bone architecture and for some, but not all, anabolic actions of intermittent PTH administration. Lilian I. Plotkin-**USA.**

10:00-10:30

Coffee break

10:30-11:30

Platform session 10

Connexins in inherited and acquired diseases

Chair: Lilian I. Plotkin and Xavier F. Figueroa

- 37) Connexin40 abnormalities and atrial fibrillation. Eric C. Beyer-**USA.**
- 38) The Keratitis-ichthyosis-deafness (KID) syndrome mouse model Cx26S17F exhibits an altered calcium gradient and ceramide profile in the epidermis. Klaus Willecke-**Germany.**
- 39) Slow deactivation kinetics of hyperactive heteromeric hemichannels formed by Cx26 N-terminus *KID*-associated mutants and Cx43. Isaac García-**Chile.**

40) Possible role of connexins 39, 43 and 45 on muscular damage in dysferlinopathies. Luis Cea-**Chile.**

12:30-20:00

Trip for dinner, a Chilean barbeque, which will be held in a nearby farm called "Puro caballo" (approx. 1 hour south of Valparaíso). Transportation and a lunch box will be provided.

20:00

Trip back to Valparaíso

Wednesday April 1st, 2015

9:00-10:00

Keynote talk 4

Akio Suzumura: "Gap junction hemichannels as novel therapeutic targets in neurodegenerative disorders"

10:00-11:00

Platform session 11

Cell-cell communication and neuroinflammation

Chair: Juan A. Orellana and Silvia Peñuela

- 41)** Connexin32 expression by NG2⁺ progenitor cell limits neurogenic capacity of nestin⁺ type 1 and 2a progenitors in the injured hippocampus. Mark Akins-**Canada.**
- 42)** Regulation of the hypoxic activation of Pannexin-1 by amyloid beta. Laura Palmer-**Canada.**
- 43)** Death of neurons following injury requires conductive neuronal gap junction channels but not a specific connexin. Andrei Belousov-**USA.**
- 44)** Therapeutically targeting Connexin43 in ischemic stroke. John Bechberger-**Canada.**

11:00-11:30

Coffee break

11:30-12:30

Platform session 12

Pannexins and connexins in genetic and acquired diseases

Chair: Fabio Mammano and Dale W. Laird

- 45)** The cataract related mutation N188T in Connexin46 (Cx46) inhibits formation of functional gap junction channels by impairing docking process of Cx46 hemichannels. Anaclet Ngezahayo-**Germany.**
- 46)** The cataract-linked mutant Cx50D47A causes ER stress in mouse lenses. Viviana M. Berthoud-**USA.**

- 47)** Non-junctional channel function of Connexin26 (Cx26) in the cochlea for Cx26 deficiency induced hearing loss. Hong-Bo Zhao-**USA**.
- 48)** Protective effects of Connexin43 signaling against experimentally induced acute liver failure in mouse. Michael Maes-**Belgium**.

12:30-13:30

Business meeting

- Presentation of the IGJC 2017
- Proposals for the IGJC 2019
- Presentation of student awards.

Free afternoon

Ideal for wine tasting in Casablanca or sightseeing Valparaíso and Viña del Mar. A lunch box will be provided.

19:00

Final Banquet at “Muelle Baron” (Baron Pier). Attendees should arrive to “Muelle Prat” (Prat Pier) at 18:00 to board typical Chilean boats that will bring us to Baron Pier for the banquet.

Thursday April 2nd, 2015

9:00-10:00

Platform session 13

Cancer and cell-cell communication

Chair: E. Martha Pérez Armendariz and Maria L. Z. Dagli

- 49)** Targeting endothelial Connexin40 inhibits tumor growth by reducing angiogenesis and enhancing vessel function. Jacques-Antoine Haefliger-**Switzerland.**
- 50)** Osteocytic Connexin 43 hemichannels suppress breast cancer growth and bone metastasis. Jean Jiang-**USA.**
- 51)** The role of Connexin43 in glioma migration and invasion. Christian Naus-**Canada.**
- 52)** Pannexin1 regulates melanoma progression. Silvia Peñuela-**Canada.**

10:00-10:30

Coffee break

10:30-11:30

Platform session 14

Connexins as conduits and therapeutic targets

Chair: Patricia E. Martin and Mauricio A. Retamal

- 53)** Drug discovery: lipidation of connexin mimetic peptides increases efficacy in gap junction inhibition. Maura Cotter-**USA.**
- 54)** siRNA therapy: validation of gap junction delivery in vitro and in vivo. Virginijus Valiunas-**USA.**
- 55)** Pannexin 1 regulation of inflammatory pathways in vascular cells. Scott Johnstone-**UK.**

56) Discovery of a selective connexin hemichannel blocker and its use to revert and prevent progression of muscular dystrophy. Juan C. Sáez-**Chile**.

11:30-12:00
Closing Remarks

Afternoon

Free transportation from the “Parque Cultural de Valparaíso” to Santiago’s airport or other connections (e.g., bus station or Metro station in Santiago). Lunch box will be provided.

POSTER SESSIONS

Organized by alphabetical order with respect to last name of the first author.

Odd numbers must present in poster session 1 and the even numbers in poster session 2

01. *Multifaceted analysis of gap junction proteins in lung cancer.* **Aasen, Trond.**, Sansano, Irene., Romagosa, Cleofé., Montero, María Ángeles., Muñoz, María José., Salat-Canela, Clàudia., Moliné, Teresa., Cabrera, Guadalupe., Martínez, Alexandre., Hernández Losa, Javier.
02. *Involvement of hemichannels in stress-induced pre-activation of glial cells during poly (i:c)-promoted inflammatory response.* **Aguirre, Adam.**, Maturana, Carola., Sáez, Juan C.
03. *Gap junctions in human blood-brain barrier endothelial cells hcmec/D3 are functionally linked to adenosine receptors via cyclic nucleotide gated channels.* **Bader, Almke.**, Begant, Daniela., Bintig, Willem., Ngezahayo, Anaclet.
04. *Rol of hemichannels in Trypanosomacruzi infection.* **Barría, Iván.**, Silvestre, Claudio., Estay, Yubitza., Vega, José Luis., González, Jorge., Sáez, Juan C.
05. *Implication of myocardial connexin-43 in antiarrhythmic effects of melatonin in hypertensive rats.* Benova, Tamara., Viczenczova, Csilla., Radosinska, J., Bacova, Barbara., Knezl, Vladimir., Dosenko, V., Zeman, M., **Diez, Emiliano.**, Tribulova, Narcisa.
06. *Panx1 mediates ananamide transport in pyramidal hippocampal neurons.* **Bialecki, J.**, Weilinger, Nicholas., Nagy, James., Hill, Matthew., Thompson, Roger.

07. *A molecular signature in the Pannexin 1 intracellular loop confers channel activation by the $\alpha 1$ adrenoreceptor in smooth muscle cells.* **Billaud, Marie.**, Chiu, Yu-Hsin., Lohman, Alexander., Parpaite, Thibaud., Butcher, Joshua., Mutchler, Stephanie., DeLalio, Leon., Artamonov, Mykhaylo., Sandilos, Joanna., Best, Angela., Somlyo, Avril., Thompson, Roger., Le, Thu., Ravichandran, Kodi., Bayliss, Douglas., Isakson, Brant.
08. *Tryptophan Scanning Reveals Dense Packing of Connexin Transmembrane Domains in Gap Junction Channels Composed of Cx32.* Brennan, Matthew., Karcz, Jennifer., Vaughn, Nicholas., Woolwine-Cunningham, Yvonne., DePriest, Adam., Escalona, Yerko., Perez-Acle, Tomas., **Skerrett, Martha.**
09. *Connexin 37-induced, caspase 3-dependent cell death is regulated by S321.* **Burt, Janis.**, Jacobsen, Nicole., Pontifex, Tasha.
10. *Connexin43 amplifies cerebral metabolites alteration due to Bisphenol A exposition.* **Chepied, Amandine.**, Delhamrani, Dounia., Turi, Laurence., Mesnil, Marc., Mème, Sandra., Defamie, Norah.
11. *SQSTM1/p62 Regulates Annular Gap Junction Budding to Promote Cx31 Gap Junction Recycling.* **Chi, Jingwei.**, Li, Li., Dawei, Yang., Zhang, Z.
12. *Non-quantal release of acetylcholine prevents the expression of connexin hemichannels in denervated skeletal myofibers.* **Cisterna, Bruno.**, Vargas, Aníbal., Puebla, Carlos., Cardozo, Christopher., Sáez, Juan.
13. *The Cx30.2 is expressed in the mouse exocrine pancreas.* **Coronel-Cruz, Cristina.**, Hernández-Tellez, Beatriz., Castell-Rodríguez, Andrés., Pérez-Armendariz, E. Martha.
14. *Modulation of the IH current enhances coincidence detection between electrically coupled neurons of the mesencephalic trigeminal (MesV) nucleus of the rat.* **Curti, Sebastian.**, Davoine, Federico

15. *Gap-junctional intercellular communication: a key factor in cellular resistance of rainbow trout gill cells to heavy metals?*. Cronier, Laurent., Didelot, Sandrine., Clarhaut, Jonathan., Cognard, Christian., Bois, Patrick., Norez, Caroline., Imbert, Nathalie., **Geneau, Graziello.**
16. *Starvation induces autophagy-mediated degradation of Cx43 and limits intercellular communication in bovine corneal endothelial cells.* D'hondt, Catheleyne., Iyyathurai, Jegan., Himpens, Bernard., Leybaert, Luc., **Bultynck, Geert.**
17. *Unravelling the mechanisms causing astrocytic uncoupling in epileptic hippocampus.* **Deshpande, Tushar.**, Bedner, Peter., Steinhäuser, Christian.
18. *Connexin-43 as a target of melatonin against low potassium induced arrhythmias.* **Diez, Emiliano.**, Benova, Tamara., Prado, Natalia., Lipták, Boris., Viczenczová, Csilla., Miatello, Roberto., Bacová, Barbara., Tribulova, Narcis.
19. *Connexin45 expression and localization in the human colon: gene and protein expression in Crohn's disease and ulcerative colitis.* **Diezmos, Erica.**, Chahrour, Saira., Sandow, Shaun., Bertrand, Paul., Liu, Lu.
20. *Regulation of gap junction hemichannels in GFSHR-17 granulosa cells by purinergic receptors.* **Dilger, Nadine.**, Bintig, Willem., Ngezahayo, Anaclet.
21. *Exploring the membrane potential of a simple dual membrane system by using a constant electric field.* **Escalona, Yerko.**, Gárate, José A., Pérez-Acle, Tomás.
22. *Expression of connexin hemichannels by skeletal muscles is an early response of streptozotocin-induced diabetes that worsens the development of the disease.* **Escamilla-Hernández, R.**, Cea, Luis., Hernández, Romina., Velarde, Victoria., Sáez, Juan.
23. *Relation between Cx46 and resistance to Hypoxia.* **Espinoza, Claudia.**, Sepúlveda, Leonardo., Zlosilo, Tamara., Retamal, Mauricio.

24. *Modeling Cx43-linked pathologies in the human context.* **Esseltine, Jessica.**, Shao, Qing., Huang, Tao., Kelly, John., Sampson, Jacinda., Laird, Dale.
25. *Lens epithelial cell line HLE-B3 express functional hemichannels sensitive to linoleic acid.* **Figueroa, Vania A.**, Oliva, Carolina A., Retamal, Mauricio A.
26. *Pannexin and purinergic signaling in fibroblast migration and dermal regeneration.* **Flores, Carolina.**, Vásquez, Jacqueline., Maripillán, Jaime., Egaña, Tomás., Brown, Donald., Martínez, Agustín.
27. *EGF induces efficient gap junction endocytosis in mouse embryonic stem cell colonies via PKC and MAPK-mediated phosphorylation of Connexin 43.* Fong, John. T., **Falk, M. Matthias.**
28. *Promoting oligodendrocyte cell replacement through development of estrogenic compounds to modulate endogenous Cx32 expression.* **Fowler, Stephanie.**, McLean, Ashleigh., Taylor, Graeme., Durst, Tony., Bennett, Steffany.
29. *Characterization of innexins in circadian pacemaker neurons of *Drosophila melanogaster*.* **Fritz, E.**, Fernández, Paola., Vargas, Anibal., Campusano, Jorge., Sáez, Juan C.
30. *Angiotensin II-induced kidney disease is associated to increase Connexin-43 and pannexin-1 levels and opposite functional regulation of hemichannels and gap junction channels in mesangial cells.* **Gómez, Gonzalo.**, Velarde, Victoria., Sáez, Juan C.
31. *Angiotensin (1-7) induces adipogenesis and down regulation of Cx43 in 3T3-L1 cell line; possible role of p38 and focal adhesion kinase .* Gonzalez-Casanova, J., **Rojas-Gomez, D.**, Martinez, AD., Dhein, S.
32. *Pannexin1 channels in smooth muscle cells are proximal to sympathetic nerves.* **Good, Miranda.**, Patel, Rahul., Mintz, Ellen., Begandt, Daniela., DeLalio, Leon., Riveire, Thibaud., Weaver, Rachel., Li, Chen., Patel, Manoj., Isakson, Brant.

33. *Impaired recovery of ischemic hindlimb perfusion and function in female Cx40^{-/-} mice does not reflect excessive acute inflammation nor estrogen levels.* **Good, Miranda.**, Querin, Lauren., Barendrick, Lindsay., Oulton, Jeremy., Munger, Stephanie., Angelov, Stoyan., Burt, Janis.
34. *Over-Expression of Connexin-43 Reduces Human Melanoma Proliferative and Metastatic Capacity.* Guerrero, Israel., Tempio, Fabian., Avalos, Ignacio., Lillo, Fernando., Gleisner, Alejandra., López, Mercedes., Mendoza-Naranjo, Ariadna., Tittarelli, Andrés., Salazar-Onfray, Flavio.
35. *Pannexin 1 and pannexin 3 regulate osteoblastic differentiation of human bone marrow mesenchymal stem cells in a three dimensional macroporous scaffold.* Guerrero, Julien., Oliveira, Hugo., Aid, Rachida., Bareille, Reine., Letourneur, Didier., Mao, Yong., Kohn, Joachim., **Amédée Vilamitjana, Joelle.**
36. *Putative MAPK site, serine 275, in connexin 37 carboxyl-terminus controls caspase-independent cell death.* **Jacobsen, Nicole.**, Pontifex, Tasha., Zehri, Asim., Burt, Janis.
37. *Connexin 43 hemichannels and mitochondrial connexin 43 in protecting osteocytes against oxidative stress via MAPK/ERK signaling.* **Jiang, Jean.**, Riquelme, Manuel., Kar, Rekha.
38. *Connexin43 mimetic peptide reduces inflammation and improves functional outcomes in a model of macular degeneration.* **Kim, Yeri.**, Guo, Cindy., Acosta, Monica., Green, Colin.
39. *Thy-1-induced migration of TNF-treated primary astrocytes requires a pathway that includes β 3-Integrin, Connexin 43 and Pannexin 1.* **Lagos-Cabré, Raul.**, Álvarez, Alvaro., Kong, Milene., Burgos, Francesca., Cárdenas, Areli., Quest, Andrew., Leyton, Lisette.
40. *The Role of Pannexins in Fat Accumulation and Metabolism.* Lee, Vanessa., Barr, Kevin., Laird, Dale., **Peñuela, Silvia.**

41. *Cx43-formed hemichannel activation by S-nitrosylation contributes to the increase in intracellular Ca²⁺ concentration associated to the endothelium-dependent vasodilation of resistance arteries.* **Lillo, Mauricio.**, Poblete, Ines., Figueroa, Xavier.
42. *Interplay between Connexin40 and nitric oxide signaling during hypertension.* **Le Gal, Loïc.**, Alonso, Florian., Mazzolai, Lucia., Meda, Paolo., Haefliger, Jacques-Antoine.
43. *Pannexin 1 channels regulate leukocyte emigration through the venous endothelium during acute inflammation.* **Lohman, Alexander.**, Leskov, Igor., Butcher, Joshua., Stokes, Tara., DeLalio, Leon., Peñuela, Silvia., Ravichandran, Kodi., Stokes, Karen., Isakson, Brant.
44. *Connexin43 inhibition prevents human vein grafts intimal hyperplasia.* **Longchamp, Alban.**, Allagnat, Florent., Alonso, Florian., Kuppler, Christopher., Ozaki, Charles-Keith., Berceli, Scott., Déglise, Sébastien., Haefliger, Jacques-Antoine.
45. *Glutathione release through connexin hemichannels: Implications for chemical modification of pores permeable to large molecules.* **Lopez, W.**, Tong, Xuhui., Ramachandran, Jayalakshmi., Ayad, Wafaa., Liu, Jade., Harris, Andrew., Contreras, Jorge.
46. *The connexin mimetic peptide Gap27 influences channel and non-channel functions in in vitro wound healing model systems.* Lorraine, Claire., Wright, Catherine., **Martin, Patricia.**
47. *Astrocytic and neuronal large-pore (hemi)channels: Activation and permeability.* **MacAulay, N.**, Bloch Hansen, D., Ye, Z-C., Calloe, K., Hartig Braunstein, T., Hofgaard, J., Ransom, B., Schak Nielsen, M.
48. *Inhibition of pannexin 1 channels alleviates acetaminophen-induced hepatotoxicity in mouse.* **Maes, M.**, Da Silva, Tereza Cristina., Decrock, Elke., Willebrords, Joost., Crespo Yanguas, Sara., Luc, Leybaert., Penuela, Silvia., Jaeschke, Hartmut., Cogliati, Bruno., Vinken, Mathieu.

49. *Critical role of gap junction communication, calcium and nitric oxide signaling in bystander responses to focal photodynamic injury.* **Mammano, F.**, Cali, Bianca., Ceolin, Stefano., Ceriani, Federico., Bortolozzi, Mario., Agnellini, Andrielly., Zorzi, Veronica., Predonzani, Andrea., Bronte, Vincenzo., Molon, Barbara.
50. *Involvement of mastocytes, microglia and astrocytes on mRNA levels of molecular elements of inflammasome in oligodendrocytes under prenatal stress.* **Maturana, Carola.**, Escamilla, Rosalba., De Maio, Antonio., Sáez, Juan Carlos.
51. *Inhibition of connexin hemichannels prevents PTZ-induced epilepsy.* **Maturana, Carola.**, Aravena, Camila., Lagos, Carlos., Saez, Juan.
52. *Aberrant localization of Connexin 43 during in vitro lung epithelial cell carcinogenesis induced by NNK.* Mennecier, Gregory., Torres, Luciana., Cogliati, Bruno., Sanches, Daniel., Mori, Claudia., Latorre, Andreia., Chaible, Lucas., Mackowiak Da Fonseca, Ivone., Nagamine, Marcia., Silva, Tereza., Fukumasu, Heidge., **Dagli, M.**
53. *Post embryotic malformation of vertebrae in zebrafish caused by the mutation in Cx43.* **Misu, Akihiro.**, Watanabe, Masakatsu., Yamanaka, Hiroaki., Skerrett, Ingrid., Kondo, Shigeru.
54. *Compatibility determinates that guide heteromeric and heterotypic gap junction channel formation: a model.* **Molina, Samuel.**, Koval, Michael.
55. *Pannexin 1 channels: a new actor in the regulation of catecholamine release from adrenal chromaffin cells.* **Momboisse, Fanny.**, Olivares, María J., Baéz, Ximena., Guerra, María J., Flores-Muñoz, Carolina., Saez, Juan C., Martínez, Agustín D., Cárdenas, Ana M.
56. *Mechanism of deafness mutations associated to the first extracellular loop of Cx26 unveils a new cis interaction properties between connexins.* **Mujica, P.**, Jara, Oscar., Maripillan, Jaime., Martinez, Agustin.

57. *Analysis of Annular Gap Junction Vesicle Processing.* **Murray, Sandra.**, Bell, Cheryl., Steed, Mesia., Shakespeare, Teresa., Bisher, Margaret.
58. *VEGF induces efficient gap junction endocytosis in porcine pulmonary artery endothelial cells via PKC and MAPK-mediated phosphorylation of Connexin 43.* Nimlamool, Wutigri., **Falk, Matthias.**
59. *Photoreceptor gap junctional coupling is controlled by a conserved set of opposing G-protein coupled receptor signaling pathways.* **O'Brien, J.**, Zhang, Zhijing., Chuang, Alice., Blackburn, Michael., Wang, Steven., Ribelayga, Christophe., Li, Hongyan.
60. *Prenatal LPS exposure increases hemichannel opening and activation of astrocytes in the offspring.* Orellana, Juan., Avendaño, Beatriz., Montero, Trinidad., Chavez, Carolina., Von Bernhardi, Rommy.
61. *Is there a voltage-controlled hydraulic gating mechanism in human Connexin Hemichannels?* **Pareja, Claudia.**, Pérez-Acle, Tomas., Escalona, Yerko., Garate, Jose Antonio., Bernardin, Alejandro., Martinez, Agustin., Garcia, Isaac., Sáez, Juan C., Araya, Raul., Huynh, Tien., Khan, Seung-gu., Zhou, Ruhong.
62. *Cartilage-specific deletion of Panx3 prevents the development of surgically induced osteoarthritis.* **Peñuela, Silvia.**, Moon, Paxton., Barr, Kevin., Pin, Christopher., Welch, Ian., Attur, Mukundan., Abramson, Steven., Beier, Frank., Laird, Dale.
63. *Linoleic acid via G-protein receptor 40 and Akt kinase induces hemichannel activity in human gastric epithelial cells.* **Puebla, Carlos.**, Cisterna, Bruno., Lampe, Paul., Sáez, Juan.
64. *Purinergic Signaling in Vasculogenic Mimicry in Ovarian Cancer.* **Racordon, D.**, Owen, Gareth., Fernández, Paola., Harcha, Paloma., Oliva, Bárbara., Sáez, Juan Carlos.

65. *Linoleic acid induces lens epithelial cell death through the opening of connexin hemichannels.* **Retamal, Mauricio.**, Figueroa, Vania., Oliva, Carolina.
66. *Inhibition of 3T3-L1 adipogenesis by Angiotensin II: differential regulation of the gap junction protein connexin 43 and β -catenin signaling.* **Rojas-Gomez, D.**, Gonzalez-Casanova, J., Dhein, S., Martínez, AD.
67. *Role of Gap Junctions on the cytotoxic against tumor cells mediated by NK and CD8⁺ T cells.* **Salazar-Onfray, Flavio.**, Guerrero, Israel., Lillo, Fernando., Gleisner, Alejandra., López, Mercedes., Tittarelli, Andrés., Mendoza-Naranjo, Ariadna.
68. *Translational regulation and functional analysis of N-terminally truncated Cx43 isoforms.* **Salat-Canela, Claudia.**, De Koninck, Magali., Muñoz, Maria José., Cabrer, Alejandro., García Vega, Laura., Santamaría, Anna., Coll, Olga., Gebauer, Fátima., Sesé, Marta., Ramón Y Cajal, Santiago., Aasen, Trond.
69. *Glucose increases opening of hemichannels through a glycolytic-dependent mechanism.* **Salgado, Magdiel.**, Orellana, Juan., Carril, Claudio., Elizondo-Vega, Roberto., Saez, Juan., García-Robles, María.
70. *Generation of concatemeric connexins to investigate the oligomerisation behavior.* **Schadzek, Patrik.**, Hermes, Doris., Ngezahayo, Anaclet.
71. *Mapping complete coupling networks in the mammalian retina.* **Sigulinsky, Crystal.**, Lauritzen, J., Rapp, Christopher., Sessions, Alex., Emrech, Daniel., Rapp, Kevin., Watt, Carl., Anderson, James., Jones, Bryan., Marc, Robert.
72. *Innexin hemichannel in the protozoan Trypanosoma cruzi.* **Silvestre, C.**, Moraga, Claudio., Lagos, David., Barria, Ivan., Estay, Yubitza., González, Jorge., Sáez, Juan Carlos., Vega, José Luis.
73. *Role of Connexin40 in the renal endothelial derived hyperpolarization.* **Sorensen, Charlotte.**, Brasen, Jens Christian.

74. *Determining the functional significance of Cx45 carboxyl-terminal domain dimerization.* **Sorgen, Paul.**, Trease, Andrew., Contreras, Jorge., Harris, Andrew.
75. *Regulation of Cx43 by tyrosine kinase 2 phosphorylation.* **Sorgen, Paul.**, Li, Hanjun.
76. *Effect of pH and phosphorylation on the secondary structure of the CT domain from different connexin isoforms.* **Sorgen, Paul.**, Spagnol, Gaëlle., Al-Mugotir, Mona., Zach, Sydney., Li, Hanjun., Trease, Andrew., Grosely, Rosslyn.
77. *Determining the functional significance of Cx45 carboxyl-terminal domain dimerization.* Sorgen, Paul., Trease, Andrew., Contreras, Jorge., Harris, Andrew
78. *Cx26 knockdown predisposes the mammary gland to primary mammary tumours in a DMBA-induced mouse model of breast cancer.* **Stewart, Michael.**, Bechberger, John., Welch, Ian., Naus, Christian., Laird, Dale.
79. *Connexin32 signaling attenuates liver damage, hepatic steatosis and lipid peroxidation in a murine model of nonalcoholic fatty liver disease.* Tiburcio, Taynã., Willebrords, Joost., Pereira, Isabel., Araújo, Cintia., Crespo Yanguas, Sara., Maes, Michaël., Da Silva, Tereza., Dagli, MariaLúcia., Vinken, Mathieu., **Cogliati, B.**
80. *The first extracellular domain plays an important role in single channel conductance of Cx50 gap junction channels.* Tong, Xiaoling., Aoyama, Hiroshi., Sudhakar, Swathy., Chen, Honghong., **Bai, Donglin.**
81. *Cx39 forms hemichannels but not gap junctions channels in HeLa cells.* **Vargas, AA.**, Cisterna, BA., Vielma, A., Schmachtenberg, O., Sáez, JC.
82. *Recombinant expression of human connexin 26 in *E. coli* to study the gating mechanism with single molecule fluorescence microscopy.* **Von Der Hocht, Iris.**, Vergara, Ignacio., Zeilinger, Carsten., Fitter, Jörg.

83. *The role of connexin43 hemichannels in limbic seizures.* **Walrave, Laura.**, Vinken, Mathieu., Leybaert, Luc., Smolders, Ilse.
84. *Trafficking and turnover of Cx36 in HeLa cells studied by fluorescent pulse-chase labeling.* Wang, Helen., Mitchell, Cheryl., **O'Brien, John.**
85. *Arrhythmogenic consequences of connexin hemichannel openings in the heart.* **Wang, Nan.**, Vandersickel, Nele., Gadicherla, Ashish., Sipido, Karin., Leybaert, Luc.
86. *Characterization of gap junctions working on skin pattern formation of zebrafish.* **Watanabe, Masakatsu.**, Sawada, Risa., Aramaki, Toshihiro., Skerrett, I., Kondo, Shigeru.
87. *Promoter analysis and targeted mutagenesis of the zebrafish Cx79.8 gene.* Yoshikawa, Shunichi., Vila, Alejandro., **O'Brien, J.**

About Valparaíso

The IGJC 2015 conference will be held (March 28th - April 2nd) at the South American Port of Valparaíso in Chile. Valparaíso and its neighboring cities are home to about one million people. However, Valparaíso itself is a small city of about 200,000 inhabitants, making easy for people to walk and use public transportation. The World Heritage List by UNESCO in 2004 included the historic quarter of Valparaíso. The hills, Cerro Alegre and Cerro Concepción, are at the heart of its historic quarter and are an important touristic attraction due to its many bars, pubs, restaurants and small hotels, including the best boutique hotels in the country. The fifteen urban elevators (funiculares)-heritage of the industrial revolution- and the trolleybuses (the oldest in the world that still work) are two unique characteristics of the city. All these things provide a unique image and atmosphere to the city. Valparaíso is just one and half hours from Santiago's International Airport and the city of Santiago, making national and international travel easy. From this airport, connections are possible to the major touristic attractions in the country, including Patagonia (Torres del Paine), the Atacama Desert (San Pedro de Atacama), and Rapa Nui (Easter Island). In addition, Valparaíso is two hours away from the main ski resorts in Latin America, such as: Portillo, La Parva, El Colorado and Valle Nevado.

The Convention Center is in Valparaíso's Cultural Park, a major cultural center of contemporary architecture and public space of 1.5 ha (3.7 ac). The Valparaíso Cultural Park (PCdV) boasts an auditorium with a capacity of 307 seats, and an exhibition hall of 462 m² (4,900 ft²) in which all posters will be displayed throughout the entire length of the conference. The PCdV is a 10-minute bus ride from the Ibis and Diego de Almagro hotels. Shuttle buses will provide transportation to all participants every day: from the hotels to the PCdV early in the morning, and from the PCdV to the hotels after the last session.

Locations and Social Activities

Parque Cultural de Valparaíso (PCDV)

The Congress will take place in Parque Cultural de Valparaíso. It is located in Cerro Cárcel, which was the prison of Valparaíso until 1994, but today serves the community as a Cultural Park.

Address: Calle Cárcel 471, Cerro Cárcel, Valparaíso
www.pcdv.cl

Palacio Baburizza and Paseo Yugoslavo

Welcome Reception and Dinner will be held in the Baburizza Palace. The historic site is an Art Deco and Art Nouveau building built in 1916 and located at Paseo Yugoslavo. Since 1971, Baburizza Palace is working as the Fine Arts Museum of Valparaíso. In 1979 it was declared National Monument.

Address: Paseo Yugoslavo 176, Cerro Alegre, Valparaíso
www.museobaburizza.cl

Puro Caballo

Puro Caballo is part of La Vega Farm, at Casablanca Valley, where we will experience a typical Chilean barbecue. Puro Caballo has eighty years of experience raising Chilean horses, a breed specific to the country. The event will include demonstrations of Chilean traditions, including cuisine, folklore, crafts and, of course, *el huaso*, a typical national character.

Address: Fundo la Vega, Lagunillas, Valle de Casablanca
www.purocaballo.cl

Muelle Barón

For our closing event, we will depart from the Prat Pier in small fishing boats to tour the beautiful Valparaíso harbour at sunset. We finish the tour at Barón Pier for a banquet by the sea.

Useful information for your visit to Valparaíso

- Please exchange money in the offices established (In Prat Street, one block from Plaza Sotomayor, across from Banco de Chile).
- Only small bills in your pockets.
- Buisnesses usually do not accept large bills.
- The voltage in Chilean outlets is 220V/50Hz. The electric Plug/Outlet are type C or L.
- For your convenience, use comfortable shoes and clothes, since the majority of attractions are located on hills.
- The mean temperature in Valparaiso is mild at 14.2°C (57.56°F). In April the temperature ranges between 19°C (66.2 °F) and 11°C (51.8°F), with occasional rain.
- Please watch your belongings (cell phone, cameras, wallet) while you are walking around Valparaíso.
- Keep your documents (IDs) such as passport, airfare, etc., in a safe place. We highly recommend taking a copy of those documents to carry with you.
- Public transportation is paid with cash (only Chilean pesos), however in Santiago the public transportation is paid with a card that you can buy in Metro Stations.
- ATM's with "Redbanc" label accept foreign credit cards.



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Welcome to the CINV (Centro Interdisciplinario de Neurociencia de Valparaíso)

The CINV (www.cinv.cl) is an institute housed at the Universidad de Valparaíso (www.uv.cl). The Director of the CINV is the biophysicist Dr. Ramón Latorre, a Chilean national science prize. The CINV is specialized in the study of the nervous system, and includes biophysicists, physiologists, neurobiologist, and experts on bioinformatics and molecular modeling. Its scope of study covers from the inner working of proteins that transduce signals from the outside world to the behavior of neural networks and of animals.

The CINV is involved in the important role of training future neurobiologist by participating in the Master and Ph.D. Neuroscience and Ph.D. Biophysics Programs of the Universidad de Valparaíso. In 2011 the CINV became the first Center within a public university to become a Millenium Institute, and from the science field, seeks to be an active collaborator in the reactivation of Valparaíso. In early 2017 CINV will open its new research building (<http://cinv.uv.cl/en/our-new-building/>).

CINV researchers:

- Ana María Cárdenas (*vesicle trafficking and exocytosis*)
- Adrián Palacios (*Sensory and Neurodegeneratives process*)
- Alan Neely (*Biophysics of ion channels*)
- Agustín Martínez (*Connexins and Pannexins*)
- Andrés Chávez (*Synaptic transmission and plasticity*)
- Carlos González (*Biophysics of ion channels*)
- David Naranjo (*Biophysics of ion channels*)
- Fernando D. González-Nilo (*Bioinformatics*)
- John Ewer (*Drosophila behavior and circadian clock*)
- Juan Carlos Sáez (*Connexins and Pannexins*)
- Kathleen Whitlock (*Genetic, development and neurobiology*)
- Oliver Schmachtenberg (*Sensory physiology*)
- Patricio Orio (*Mathematical Modelling of Neuron Behaviour*)
- Ramón Latorre (*Biophysics of ion channels*)
- Tomás Pérez-Acle (*Bioinformatics*)



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Emergency Phones:

Ambulance: 131

Fire Department: 132

Police: 133

Maritime Emergency: 137



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Valparaíso



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