

CURRICULUM VITAE

Name: Juan C. Sáez, Ph.D.
Birthday: February 2, 1956
Citizenship: Chilean.

DEGREES: -Ph.D. in Neuroscience, Albert Einstein Coll. Med., Yeshiva Univ., Bronx, N.Y. (1983-1986).
Biochemist (equivalent to MS in Biochemistry), Univ. de Concepción, Concepción. Chile (1974-1979).

ACADEMIC POSITIONS:

2018-present. Professor, Neurosci. Institute, Univ. de Valparaíso, Chile.
2004-2021. Professor, Dept. Physiology, Pontificia Univ. Católica de Chile (PUCC), Santiago, Chile.
2007-present. Visiting Professor, Dept. Neuroscience, Albert Einstein Coll. Medicine (AECOM),
Yeshiva Univ., Bronx, N.Y., USA.
1994-Nov. 2004: Associate Professor, Dept. Physiology, PUCC, Santiago, Chile.
1994-2007: Visiting Associate Professor, Dept. Neuroscience, AECOM, Yeshiva Univ., Bronx, N.Y.,
USA.
1993-1994: Assistant Professor, Dept. Physiology, PUCC, Santiago, Chile.
1989-1993: Assistant Professor, Dept. Neuroscience, AECOM, Yeshiva Univ., Bronx, N.Y., USA.
1987-1989: Instructor, Dept. Neuroscience, AECOM, Yeshiva Univ., Bronx, N.Y., USA.
1986-1987: Post-doctoral fellow, Dept. Neuroscience, AECOM, Yeshiva Univ., Bronx, N.Y., USA.
1979 -1983: Instructor, Dept. Physiology, Univ. de Concepción, Chile.

ADMINISTRATIVE POSITIONS:

2022-present. Director of the Neuroscience Interdisciplinary Center of Valparaíso.
2017-2021. Deputy Director of the Neuroscience Interdisciplinary Center of Valparaíso.
2019-present. Member of the Human Capital Training Advisory Committee ANID.
2015-2021. Coordinator of Magister, Doctorate and Post-doctorate scholarships in Physiology and
Biochemistry. CONICYT.
2018-2019. Honorary Professor in the School of Public Health of the University of Hong Kong.
2013-2019. Committee member of the Ph.D. program in Neuroscience. Pontificia Univ. Católica de Chile,
Santiago, Chile.
2003-2014. Director of the Ph.D. Program in Physiological Sciences. Pontificia Univ. Católica de Chile,
Santiago, Chile.
2009-2019. Subdirector of the Center for Neuroscience, Pontificia Universidad Católica de Chile.

AWARDS AND DISTINCTIONS:

2021-2023. Member of the Advisory Board of **USERN** (Universal Scientific and Research Network).
2019. International Member of the National Academy of Science (**NAS**) USA.
2017. Academic Member of the Latin American Academy of Science (**ACAL**).
2017. Outstanding work in the field of transfer of research results, Directorate of Transfer and
Development of the Vice-rectory for Research.
2014. Winner of the VII UC Patent Contest. "Identification, compositions and therapeutic uses of heterocyclic
blockers of hemichannels formed by connexins".
2010. Winner of the II Competition of Intellectual Property, Pontificia Universidad Católica de Chile
2008, Chilean **Scopus price** given by Elsevier Editorial. The Chilean Scientist with the highest productivity

and impact in Pharmacology, Biochemistry, Genetics and Molecular Biology.

1993, Glaxo Research Institute. Fellowship Award.

1987, Grass Fellowship to work as an independent Scientist at the Marine Biological Laboratory.

1980, Best Thesis work of the year given by the Society of Pharmacists and Biochemists of Concepción.

MEMBERSHIP OF SCIENTIFIC SOCIETIES:

1985-present Latin American Biophysical Society.

1990-1994 Biophysical Society

1990-2015 American Society for Cell Biology, USA

1994-present. Chilean Society for Physiology.

1994-present. Chilean Society for Biology.

1994-present. Chilean Society for Cell Biology.

2003-present. Chilean Society for Neuroscience.

2003-present. Free Radicals and Antioxidants Group-Chile.

2019-present. Society of General Physiology, USA

AD HOC EVALUATOR OF SCIENTIFIC JOURNALS:

Proceedings of the Academy of Science; Journal of Biological Chemistry; Journal of Cell Biology, Journal of Cell Physiology; American Journal of Physiology; Journal of Cell Science; Journal of Cell Biochemistry; Journal of Biological Chemistry; Journal of Immunology; FASEB J; BBA; BBRC; Journal of Neuroscience; Neuroscience; Journal of Neurochemistry; Glia; Journal of Neuroscience Research; Cell Calcium; Hepatology; Experimental Lung Res; Experimental Neurology.; Glia, Cell Adhesion and Communication; Journal of Cellular and Molecular Medicine; Journal of Experimental Medicine; Journal of Physiology; eLife, Plos One, Cardiovascular Research and Microvascular Res. Nature Reviews Rheumatology. Nature Metabolism; Science Signaling, eLife, Human Molecular Genetics; Nature Communication; Frontiers Cellular Neuroscience.

ORGANIZER OF SCIENTIFIC EVENTS

2020. Symposium on “Recent experimental designs to discover effective therapies to treat epilepsy”. Chilean Soc. of Neuroscience 2020.

2018 Symposium on “Progress in epilepsy” Chilean Soc. of Biology/Chilean Soc. of Neuroscience 2018.

2018...Latin American Training Program, funded by SfN and IBRO. Graduate students and post-doctoral fellows of Latin American countries attend a three weeks course in the CNIV -Valparaiso 2018 (Co-organized with A.D. Martínez).

2015. International Gap Junction Conference 2015 in Valparaíso-Chile (Co-organized with A.D. Martínez, Viviana M. Berthoud and Maria Dagli).

2015. Workshop; “Biophysic of hemichannels and gap junction channels: A theoretical and practical training”.

Santiago Valparaíso, 2015. (Co-organized with A.D. Martínez and M.A. Retamal).

2013. Symposium, co-organizer with Dr. AD Martínez: “Role and regulation of channels and hemichannels formed by connexin or pannexins in the nervous system” Reunión Anual de la Sociedad de

Neurociencias

de Chile, Valparaíso, 2013.

2013. Symposium, co-organizer with AD. Martínez: “Cell Membrane Channels Made by Connexins or Pannexins are Key Players in Genetic and Acquired Diseases” presented during the XXVII Annual Meeting of the Chilean Society for Cell Biology. November, Pucón, 2013.
2012. Workshop organizer: “Structure and function of connexin, pannexin and other cellular transporters. October 20-30, 2012, Valparaíso.
2012. Symposium organizer: “Intercellular communication via pannexin- and connexin-based channels in health and disease”. Chilean meeting of the Society for Cell Biology. October, 2012.
2011. Symposium organizer. “Regulation of glial connexin channels: from the nucleus to the membrane”. Chilean congress of the Society for Physiology.
2009. Mini Symposium Organizer. “El SIDA como una enfermedad neurodegenerative”. Abril, 2009.
2006. Sympisium Organizer. “Gap junction hemichannels and mechanisms that regulate their functional state under physiological and pathological conditions” 2^oCongress of the Chilean Society for Neuroscience, September, Curicó, Chile.
2006. Workshop Co-organizer with Dr. M. Villalón. “Regulation and function of free intracellular Ca²⁺ and intercellular Ca²⁺ waves”, January, Santiago.
2003. Simposium Organizer. “Gap junction in the inflammatory response” del V Congreso IberoAmericano de Biofísica. Rio de Janeiro, Brasil.
2001. Workshop Organizer. “Chemical and electrical synopsis: theoretical and practical advances”. Pontificia Univ. Católica de Chile, Santiago, Chile.
1995. Workshop Co-organizer with Dr. Ramón Latorre. "From Ion Channels to Cell-to-Cell Conversations". CECS, Santiago, Chile.

REVIEW EDITOR

Biomolecules 2020-present
eLife 202-.present
Fontiers in Neuroscience-Neuroenergetics
Frontiers in Physiology

PRESENTATIONS TO SCIENTIFIC MEETINGS

415 abstracts have been presented in different Chilean, South American, and other International Meetings in the USA, Canada, India, Japan, China, and Europe.

PUBLICATIONS (ISI) 210 Scientific publications (Google Scholar Total citations =21.243, H= 73).

211. The antiseizure medication Valproate increases hemichannel activity in brain cells, which could worsen disease outcomes García-Rodríguez C, Duarte Y, Ardiles A, Sáez JC. J.Neurochem (under review).

210. Li H, Guo A, Salgado M, **Sáez JC**, Lau CG. The novel connexin hemichannel inhibitor D4 produces

rapid antidepressant-like effects in mice. **J Neuroinflammation** 2023 Aug 20;20(1):191. doi: 10.1186/s12974-023-02873-z.

209. Jiménez-Madrona E, Morado-Díaz CJ, Talaverón R, Tabernero A, Pastor Am, Sáez JC, Matarredona ER Antiproliferative effect of boldine on neural progenitor cells and on glioblastoma cells. **Frontiers Neurosc. Neurogenesis** 2023 Aug 16;17:1211467. doi: 10.3389/fnins.2023.1211467. eCollection 2023.

208. Güiza J, Solís F, Valenzuelab B, Arancibiab D, Zamoranob P, González J, Saavedrad J, Neely A, Salgado M, Martínez AD, Sáez JC, Vega JL. Unnixin is a protein subunit of a large-pore channel expressed by unicellular organisms. **Proc Natl. Acad. Sci. USA** 2023; (31)120, 1-8. doi.org/10.1073/pnas.2307898120. e2307898120.

207. Toro CA, Johnson K, Hansen J, Siddiq MM, Vásquez W, Zhao W, Graham ZA, Sáez JC, Iyengar R, Cardozo CP. Boldine modulates glial transcription and functional recovery in a murine model of contusion spinal cord injury. **Frontiers in Cellular Neuroscience**, Section Neuropathology. 2023 Jun 21;17:1163436. doi: 10.3389/fncel.2023.1163436. eCollection 2023.

206. García-Rodríguez C, Mujica P Illanes-González J, López A, Vargas C, Sáez J.C., González-Jamett A, Ardiles A.O. Probenecid, an Old Drug with Potential New Uses for Central Nervous System Disorders and Neuroinflammation. **Biomedicine** 2023. May 24;11(6):1516. doi: 10.3390/biomedicines11061516.

205. Cea, LA, Vásquez W, Hernández-Salinas R, Vielma AZ, Castillo-Ruíz M, Velarde V, Salgado M, Sáez JC. Skeletal muscle atrophy induced by diabetes is mediated by non-selective channels and prevented by boldine. **Biomolecules** 2023 Apr 21;13(4):708. doi: 10.3390/biom13040708.

204. Abbott AC, García IE, Villanelo F, Flores-Muñoz C, Ceriani R, Maripillán J, Novoa-Molina J, Figueroa-Cares C, Sáez JC, Pérez-Acle TO, Sánchez HA, Martínez AD. Expression of KID syndromic mutation Cx26S17F produces hyperactive hemichannels in supporting cells of the organ of Corti. **Frontiers in Cell and Developmental Biol.** 2023 Jan 9;10:1071202. doi: 10.3389/fcell.2022.1071202. eCollection 2022.

203. Vega JL, Gutiérrez C, Rojas M, Güiza J, Sáez JC. Contribution of large-pore channels to inflammation induced by microorganisms. **Frontiers in Cell and Developmental Biol.** 2023 Jan 9;10:1094362. doi: 10.3389/fcell.2022.1094362. eCollection 2022.

202. Guo A, Zhang H, Li H, Chiu A, García-Rodríguez C, Lagos CF, Sáez JC, Lau CG. Inhibition of connexin hemichannels alleviates neuroinflammation and hyperexcitability in temporal lobe epilepsy. **Proc. Natl. Acad. Sci. USA.** 2022 Nov 8;119(45):e2213162119. doi: 10.1073/pnas.2213162119.

201. Lucero CM, Marambio-Ruiz L, Balmazabal J, Prieto-Villalobos J, León M, Fernández P, Orellana JA, Velarde V, Sáez JC, Gómez GI. TNF- α plus IL-1 β induces opposite regulation of Cx43 hemichannels and gap junctions in mesangial cells through a RhoA/ROCK-dependent pathway **Int J Mol Sci.** 2022 Sep 3;23(17):10097. doi: 10.3390/ijms231710097

200. Recabal A, López S, Salgado M, Palma A, Obregón AM, Elizondo-Vega R, Sáez JC, García-Robles MA. Short term sucrose diet impact cell proliferation of neural precursors in the adult hypothalamus. **Nutrients** 2022 Jun 21;14(13):2564. doi: 10.3390/nu14132564.

199. Palacios-Prado N, Soto PA, López X, Choi EJ, Marquez-Miranda V, Rojas M, Duarte Y, Lee J, González-Nilo FD, Sáez JC. Endogenous pannexin1 channels form functional intercellular cell-cell channels with characteristic voltage-dependent properties. **Proc Natl Acad Sci U S A.** 2022 May 3;119(18):e2202104119. doi: 10.1073/pnas.2202104119. Epub 2022 Apr 29. PMID: 35486697.



- 198.** Arredondo C, Cefaliello C, Dyrda A, Jury N, Martínez P, Díaz KI, Amaro A, Tran H, Morales D, Pertusa M, Stoica E, Fritz E, Corvalán D, Abarzua S, Méndez-Ruette M, Fernández P, Rojas F, Kumar MS, Aguilar R, Almeida S, Weiss A, Bustos FJ, González-Nilo F, Otero C, Tevy F, Bosco DA, **Sáez JC**, Kähne T, Gao F-B, Berry J-D, Nicholson K, Sena-Esteves M, Madrid R, Varela D, Montecino M, Brown RH, van Zundert B. Non-cell autonomous toxicity of ALS/FTD astrocytes to motoneurons is mediated by an excessive release of inorganic polyphosphate. **Neuron** 2022(10):1656-1670, May 12, 2022. doi:10.1016/j.neuron.2022.02.010.
- 197.** González-Jamett A, Vásquez W, Cifuentes-Riveros G, Martínez-Pando R, **Sáez JC**, Cárdenas AM. Oxidative stress, inflammation and connexin hemichannels in muscular dystrophies. **Biomedicines**. 2022 Feb 21;10(2):507. doi: 10.3390/biomedicines10020507 .
- 196.** García-Rodríguez C, Bravo-Tobar ID, Duarte Y, Barrio LC, **Sáez JC**. Contribution of non-selective membrane channels and receptors in epilepsy. **Pharmacol Ther**. 2022 Mar;231:107980. doi: 10.1016/j.pharmthera.2021.107980.
- 195.** Güiza J, García A, Arriagada J, Gutiérrez C, González J, Márquez-Miranda V, Alegría-Arcos M, Duarte Y, Rojas M, González-Nilo F, **Sáez JC**, Vega JL. Unnexins: Homologs of innexin proteins in Trypanosomatidae parasites. **J Cell Physiol**. 2022 Feb;237(2):1547-1560. doi: 10.1002/jcp.30626.
- 194.** Wang Y, Su Y, Yu G, Wang X, Chen X, Yu B, Cheng Y, Li R, **Sáez JC**, Yi C, Xiao L, Niu J. Reduced Oligodendrocyte Precursor Cell Impairs Astrocytic Development in Early Life Stress. **Adv Sci (Weinh)**. 2021 Aug;8(16):e2101181. doi: 10.1002/advs.202101181
- 193.** Bravo-Tobar ID, Fernández P, **Sáez JC**, Dagnino-Subiabre A. Long-term effects of stress resilience: Hippocampal neuroinflammation and behavioral approach in male rats. **J Neurosci Res**. 2021 Oct;99(10):2493-2510. doi: 10.1002/jnr.24902.
- 192.** López X, Palacios-Prado N, Güiza J, Escamilla R, Fernández P, Vega JL, Rojas M, Marquez-Miranda V, Chamorro E, Cárdenas AM, Maldifassi MC, Martínez AD, Duarte Y, González-Nilo FD, **Sáez JC**. A physiologic rise in cytoplasmic calcium ion signal increases pannexin1 channel activity via a C-terminus phosphorylation by CaMK II. **Proc Natl Acad Sci USA** August 10, 2021 118 (32) e2108967118; <https://doi.org/10.1073/pnas.2108967118>.
- 191.** Güiza J, Arriagada J, Rodríguez L, Gutiérrez C, Duarte Y, **Sáez JC**, Vega JL. Anti-parasitics drugs that modulate the non-selective channels formed by connexins or pannexins. **BBA - Molecular Basis of Disease** 2021 Oct 1;1867(10):166188. doi: 10.1016/j.bbadis.2021.166188.
- 190.** Salgado M, García-Robles MÁ, **Sáez JC**. Purinergic signaling in tancytes and its contribution to nutritional sensing. **Purinergic Signaling**. May 21. doi: 10.1007/s11302-021-09791-w. Online ahead of print. PMID: 34018139
- 189.** Harcha PA, Garcés P, Arredondo C, Fernández G, **Sáez JC**, van Zundert B. Mast Cell and Astrocyte Hemichannels and Their Role in Alzheimer's Disease, ALS, and Harmful Stress Conditions. **Int J Molec Sci** 2021 Feb 15;22(4):1924. doi: 10.3390/ijms22041924.
- 188.** López X, Escamilla R, Fernández P, Duarte Y, González-Nilo F, Palacios-Prado N, Martínez AD, **Sáez JC**. Stretch-induced activation of pannexin 1 channels can be prevented by PKA-dependent phosphorylation **Int J Molec Sci** 2020 Dec 2;21(23):E9180. doi: 10.3390/ijms21239180.
- 187.** Choi EJ, Palacios-Prado N, **Sáez JC**, Lee J. Identification of Cx45 as a major component of gap junctions in HeLa cells. **Biomolecules**. 2020 Sep 29;10(10):E1389.
- 186.** Recabal A, Fernández P, López S, Ordenes P, Elizondo R, Farkas C, Uribe E, Caprile T, **Sáez JC**, García-Robles MA. FGF2-induced tancyte proliferation involves a connexin 43-hemichannel/purinergic

pathway. **J. Neurochem.** 2021 Jan; 156(2):182-199. doi: 10.1111/jnc.15188.

185. Cea LA, Fernández G, Arias GB, Castillo-Ruiz M, Brañes MC, **Sáez JC.** Blockade of hemichannels normalizes the differentiation fate of myoblasts and features of skeletal muscles from dysferlin-deficient mice. **Int J Molec Sci.** 2020 Aug 21;21(17):E6025.

184. Balboa E., Saavedra F., Cea L.A., Ramírez V., Escamilla R., Vargas A., Regueira R., **Sáez J.C.** Vitamin E blocks connexin hemichannels and prevents deleterious effects of glucocorticoid treatment on skeletal muscles. **Int. J. Molec. Sci.** 2020, Jun 8;21(11):E4094.

183. **Sáez J.C.,** Vargas A.A., Ortiz F.C., D.E., Giaume C., Orellana J.A. Permeation of molecules through astroglial connexin 43 hemichannels is modulated by cytokines with parameters depending on the permeant species. **Int. J. Molec. Sci.** 2020, Jun 1;21(11):E3970.

182. Fernández G., Arias G.B., Bevilacqua J.A., Castillo M., Caviedes P, **Sáez J.C.,** Cea L.A. Myofibers deficient in connexins 43 and 45 expression protect mice from skeletal muscle and systemic dysfunction promoted by a dysferlin mutation. **Biochem. Biophys. Acta- Molecular Basis of Disease** 1866 (8) 165800. (2020).

181. **Sáez J.C.,** Contreras-Duarte S., Labra V.C., Santibañez C.A., Mellado L.A., Inostroza C.A., Alvear T.F., Retamal M.A., Velarde V., Orellana J.A. Interferon- γ and high glucose-induced opening of Cx43 hemichannels causes endothelial cell dysfunction and damage. **Biochem. Biophys. Acta. Molecular Cell Research** 14;1867(8):118720 (2020).

180. Cisterna CB., Vargas A.A., Puebla C., Lagos C.F., Escamilla R., Matus M-F., Vilos C., Cea L.A., Barnafi E., Gaete H., Escobar D.F., Cardozo C., **Sáez J.C.** Active acetylcholine receptors prevent the atrophy of skeletal muscles and favor reinnervation. **Nature Comm.** 11: 1073, (2020).

179. Li T, Niu J, Ezan P., Koulakoff A., Yi C., **Sáez JC,** Giaume C., Xiao L. The deletion of connexin 43 in astrocytes promotes CNS remyelination by inhibiting local inflammation. **Glia** 68(6):1201-1212 (2020).

178. Giaume C., Naus C, **Sáez JC,** Leybaert L. Glial connexins and pannexins in healthy and diseased brain. **Physiol Rev.** 2021: 101(1):93-145.

177. Harcha PA., López X, Sáez PJ, Fernández P, Barría I, **Sáez JC.** Pannexin-1 channels are essential for mast cell degranulation triggered during Type I hypersensitivity reactions. **Frontiers Immunol,** 29 November 2019 <https://doi.org/10.3389/fimmu.2019.02703>.

176. Asencio-Barría C, Defamie N, **Sáez JC,** Mesnil M, Godoy AS. Direct Intercellular Communications and Cancer: A Snapshot of the biological roles of connexins in prostate Cancer. **Cancers** (Basel). 2019 Sep 14;11(9). pii: E1370.

175. Gómez GI, Velarde V, Sáez JC. Role of a RhoA/ROCK-Dependent Pathway on Renal Connexin43 Regulation in the Angiotensin II-Induced Renal Damage. **Int J Mol Sci.** 2019 Sep 7;20(18).

174. Eugenio EA, Valdebenito S, Gorska AM, Martínez AD, Bitran M, **Sáez JC.** Gap junctions coordinate the propagation of glycogenolysis induced by norepinephrine in the pineal gland. **J Neurochem.** 2019 Aug 5. doi: 10.1111/jnc.14846. [Epub ahead of print].

173. Cea LA, Balboa E, Vargas AA, Puebla C, Brañes MC, Escamilla R, Regueira T, **Sáez JC.** De novo expression of functional connexins 43 and 45 hemichannels increases sarcolemmal permeability of skeletal myofibers during endotoxemia. **Biochim Biophys Acta Mol Basis Dis.** 2019 Oct 1;1865(10):2765-2773.

172. Wellmann M, Álvarez-Ferradas C, Maturana CJ, **Sáez JC,** Bonansco C. Astroglial Ca²⁺ hyperactivity requires P2Y₁ purinergic receptors and pannexin-1 channel activation in a chronic model of epilepsy. **Frontiers Cell Neurosci.** 2018, Oct 11;9:1414.

171. **Sáez JC,** Contreras-Duarte S, Gómez GI, Labra VC, Santibañez C.A, Gajardo-Gómez R., Avendaño B.C., Díaz E.F., Montero T.D., Velarde V. Orellana JA. Connexin 43 hemichannel activity promoted by pro-

Inflammatory cytokines and high glucose alters endothelial cell function. **Front Immunol.** 2018 Aug 15;9:1899.

170. Güiza J, Barría I, Sáez JC, Vega JL. Innexins: Expression, Regulation and Functions. **Front Physiol** 2018 Oct 11;9:1414.

169. Sáez PJ, Sáez JC., Lennon-Duménil A.-M., Vargas P. Role of calcium permeable channels in dendritic cell migration. **Current Opinion Immunol.** ;52:74-80 (2018).

168. Gómez GI, Fernández P, Velarde V, Sáez JC. Angiotensin II-Induced mesangial cell damage Is preceded by cell membrane permeabilization Due to Upregulation of Non-Selective Channels. **Int J Mol Sci.** 2018 Mar 23;19(4).

167. Sáez PJ, Vargas P, Shoji KF, Harcha PA, Lennon-Duménil A-M, Sáez JC. ATP promotes the fast migration of dendritic cells through the activity of pannexin 1 channels and P2X₇ receptors. **Science Signaling** 2017 Nov 21;10(506). pii: eaah7107. doi: 10.1126/scisignal.aah7107.

166. Barría I, Güiza J, Cifuentes, F.; Zamorano, P.; Sáez, J.C.; González, J.; Vega, J.L. Trypanosoma cruzi infection induces pannexin-1 channel opening in cardiac myocytes. **Amer J Tropical Med & Hygiene** 2017 Nov 6. doi: 10.4269/ajtmh.17-0293. [Epub ahead of print]

165. Giaume C, Sáez JC, Song W, Leybaert L, Naus CC. Connexins and pannexins in Alzheimer's disease. **Neurosci Lett.** 2017 Sep 8. pii: S0304-3940(17)30740-1.

164. Rovigno M, Sáez JC. Role of astrocyte connexin hemichannels in cortical spreading depression. **Biochim Biophys Acta-Biomembranes.** 2017 Aug 29. pii: S0005-2736(17)30264-X.

163. Yi C, Ezan P, Fernández P, Schmitt J, Sáez JC, Giaume C, Koulakoff A. Inhibition of glial hemichannels by boldine treatment reduces neuronal suffering in a murine model of Alzheimer's disease. **Glia.** 65(10):1607-1625 (2017).

162. Charvériat M, Naus CC, Leybaert L, Sáez JC, Giaume C. Connexin-Dependent Neuroglial Networking as a New Therapeutic Target. **Front Cell Neurosci.** 2017 Jun 26;11:174.

161. Plotkin LI, Davis HM, Cisterna BA, Sáez JC. Connexins and Pannexins in Bone and Skeletal Muscle. **Curr Osteoporos Rep.** 15(4):326-334 (2017).

160. Balboa E, Saavedra F, Cea LA, Vargas AA, Ramírez V, Escamilla R, Sáez JC, Regueira T. Sepsis-Induced Channelopathy in Skeletal Muscles is Associated with Expression of Non-Selective Channels. **Shock.** 49(2):221-228. (2018).

159. Vargas AA, Cisterna BA, Saavedra-Leiva F, Urrutia C, Cea LA, Vielma AH, Gutierrez-Maldonado SE, Martin AJ, Pareja-Barrueto C, Escalona Y, Schmachtenberg O, Lagos CF, Pérez-Acle T, Sáez JC. On Biophysical Properties and Sensitivity to Gap Junction Blockers of Connexin 39 Hemichannels Expressed in HeLa Cells. **Front Physiol.** 2017 Feb 9;8:38.

158. Sáez JC. Unravelling a novel mechanism for the up-regulation of connexin43 gap junctions between cells derived from the blood-brain barrier. **J Physiol.** 595(8):2411-2412 (2017).

157. Puebla C, Retamal MA, Acuña R, Sáez JC. Regulation of connexin-based channels by fatty acids. **Front Physiol.** 2017 Jan 24;8:11.

156. Gajardo-Gómez R, Labra VC, Maturana CJ, Shoji KF, Santibañez CA, Sáez JC, Giaume C, Orellana JA. Cannabinoids prevent the amyloid β -induced activation of astroglial hemichannels: A neuroprotective mechanism. **Glia.** 65(1):122-137 (2017).

155. Johnson RG, Le HC, Evenson K, Loberg SW, Myslajek TM, Prabhu A, Manley AM, O'Shea C, Grunenwald H, Haddican M, Fitzgerald PM, Robinson T, Cisterna BA, Sáez JC, Liu TF, Laird DW, Sheridan JD. Connexin hemichannels: methods for dye uptake and leakage. **J Membr Biol.** 249(6):713-741 (2016).

154. Cisterna BA, Vargas AA, Puebla C, Sáez JC. Connexin hemichannels explain the ionic imbalance and lead to atrophy in denervated skeletal muscles. **Biochim Biophys Acta-Molecular Basis of Diseases.** 1862(11):2168-2176 (2016).

- 153.** Cea LA, Balboa E, Puebla C, Vargas AA, Cisterna BA, Escamilla R, Regueira T, **Sáez JC.** Dexamethasone-induced muscular atrophy is mediated by functional expression of connexin-based hemichannels. **Biochim Biophys Acta- Molecular Basis of Diseases.** 1862(10):1891-1899 (2016).
- 152.** Maturana CJ, Aguirre A, **Sáez JC.** High glucocorticoid levels during gestation activate the inflammasome in hippocampal oligodendrocytes of the offspring. **Dev Neurobiol.** 77(5):625-642 (2017).
- 151.** Cea LA, Bevilacqua JA, Arriagada C, Cárdenas AM, Bigot A, Mouly V, **Sáez JC,** Caviedes P. The absence of dysferlin induces the expression of functional connexin-based hemichannels in human myotubes. **BMC Cell Biol.** 2016 May 24;17 Suppl 1:15. doi: 10.1186/s12860-016-0096-6
- 150.** Puebla C, Cisterna BA, Salas DP, Delgado-López F, Lampe PD, **Sáez JC.** Linoleic acid permeabilizes gastric epithelial cells by increasing connexin 43 levels in the cell membrane via a GPR40- and Akt-dependent mechanism. **Biochim Biophys Acta-Cell and Molecular Biology of Lipids.** 1861(5):439-448. (2016).
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SCIENTIFIC LECTURES (INVITED)

49 lectures in different Chilean Universities and Research Institute, Institutions of USA (Yale University, UMDNJ, John Hopkins School of Medicine, NIH, Albert Einstein College of Medicine, University of Chicago and Mayo Clinic) in Mexico (UNAM), Spain (Instituto Ramón y Cajal and Hospital Ramón y Cajal), Brazil (Universidade de Sao Paulo and Instituto de Biofísica de Rio de Janeiro), France (Unité INSERM-Laboratoire de Neurobiologie Pharmacologique, Collège de France), Uruguay (Universidad de la República de Uruguay), Mexico (UNAM), Chile (Universidad de Chile, Universidad de Concepción, Universidad Austral de Chile, Universidad de Santiago de

Chile). Univ. de Chile en Valparaíso, Univ. Católica de Valparaíso. Universidad de Chile. Jichi Medical School, Japan; Gunma University, Japan; University of San Antonio, Texas Tech in Lubbock. Down State University, Brooklyn, NY, USA. University of British Columbia, Canada. University of Leuven, Belgium. Fundación Ciencia & Vida-Santiago, Chile; Barcelona University. Universidad Javeriana, Bogotá, Colombia. Vatican-Rome; University of Hong Kong.

Inaugural Conferences

- Milestones, science with history "- A long trajectory to advance the understanding of the inflammatory response in chronic diseases "Masterclasses in Sciences. . Universidad de Valparaíso. **27 de Agosto 2019.**
- Opening lecture (Conference Dr. Luis Izquierdo) Plenary lecture at the joint meeting of the Chilean Physiology Soc. And the Chilean Pharmacology Soc. **(October 2015).**
- I National Contest of Science, Technology and Innovation Camps EXPLORA Scientific Camp Chile Va! "Conversations with the Master of Sciences" of the project entitled "A Scientific, Technological and Innovative Look at the Tarapacá Region", Iquique . **(Diciembre, 2014)**
- Brain Week, Montevideo, Uruguay, "A healthier life with the brain clock on time" **(March, 2014).**
- Opening lecture of the Academic year. Graduate program in Physiology and Neuroscience. University of Sevilla, Spain, Discovering the hemichannels and their functions in the nervous system and peripheral tissues **(September 2014).**
- Opening of the Academic Year. Graduate programs of the Faculty of Cell Biology, Universidad de Concepción. "A Personal Opinion on Postgraduate Studies from Vocation to Country Commitment " **(March 30, 2012).**
- Opening of the Academic Year. Graduate programs of the Faculty of Health Sciences at the Universidad de Antofagasta. " La vocación: a personal experience in search of a contribution to the service of the country " **(May 9, 2013).**

MENTOR OF UNDERGRADUATE THESIS

- **2018-2019.** Catalina A. Ascencio Barría. "Análisis de la expresión y estado funcional de conexinas en cáncer de próstata". (Cotutoría con Dr. Alejandro Godoy).
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- **2015-2016.** Fijiko Saveedra. "Participación de los hemicanales formados por conexinas en la atrofia de los músculos esqueléticos rápidos adultos producida por denervación". Bioquímico. Pontificia Universidad Católica de Valparaíso.
- **2014.** Angélica Benvenuto. Biochemist, PUC. Pathway of intercellular communication formed by connexins and pannexins in adipose tissue.
- **2011.** Mauricio A. Lillo (**Co-mentor with Dr. Xavier Figueroa**) Biochemist, PUC. Involvement hemichannels formed by connexins or pannexins in NO transport across the Plasma membrane in the vascular wall.
- **2009.** Anibal Vargas. Lic. Biología, PUC. Characterization of antimycin A as inhibitor of hemichannels formed by connexins.
- **2009.** Daniela P. Salas. (**Co-mentor with Dr. Sergio Lavandero**). Biochemist, Universidad de Chile. Hemichannels formed by connexins in volume regulation in myocytes exposed to hyposmotic stress.
- **2009.** Paola Soto. Biologist, PUC. Study on channels formed by connexin32 in a cell line derived from oligodendrocytes.
- **2008.** Marlene Arismendi, Industrial Chemist, UTEM, Purification and biological activity of compounds derived from Boldo on channels formed by connexins.
- **2008.** Diego Hernández, Biologist, PUC. Regulation of astroglial and neuronal channels formed by connexins in neurodegenerative processes.

- **2009.** Natalia Vega, Biochemist, PUC. Regulation of cell membrane permeability by phosphorylation of hemichannels formed by connexin43 via protein kinase C (PKC).
- **2008.** Paloma Harcha, Biologist, PUC. D2SC1 cells express functional hemichannels formed by pannexina1.
- **2006.** Ariel Orellana. Biologist, PUC. Acquisition of myogenic commitment of reserve C₂C₁₂ cells requires activation of P2X receptors.
- **2006.** Pablo J. Sáez, Biologist, PUC. ATP and TNF- α induce formation gap junction channels in microglia.
- **2006.** Kenji Shoji, Biologist, PUC. The redox sensor of hemichannels formed by connexin43 is located in the carboxyl terminus of the protein subunit.
- **2005.** Juan Andrés Orellana, Biologist, PUC. Chlorpromazine inhibits the intercellular communication mediated by gap junctions in Gn-11 cells and astrocytes.
- **2005.** Constanza J. Cortés, Biologist, PUC. Opening of Cx43 hemichannels in mediated by oxidative mechanisms in astrocytes”.
- **2005.** Nicolás Palacios, Biologist, PUC. Modulation of the functional state of connexin-based channels by sexual hormones and tamoxifen in a cells line derived from human breast cancer.
- **2002-2003.** Manuel Riquelme-Biochemist, PUC. P2X receptors and connexin-based channels are needed for acquisition of myogenic commitment.
- **1998-1999.** Patricio Orío-Biochemist, Universidad de Chile. Molecular characterization and function gap junctions Express by Peripherals human lymphocytes.
- **1997.** Alejandro Sepúlveda-Biochemist, Univ. Austral de Chile. Gap junctions between antigen presenting cells and T cells: characterization and regulation of connexins.
- **1997.** Eliseo Eugeni-Biochemist, Univ. Austral de Chile. Regulation of glycogen stores by norepinephrine in rat pineal gland: role of gap junctions.
- **1994-1995.** Francisco Scheihing- Biochemist, Universidad Católica de Valparaíso. Effect of leptocarpin on gap junctions of epithelial cell lines.
- **1996.** Erwin Strahsburger-Biochemist, Univ. Austral de Chile. Regulation of gap junctional Communications in astroglial cells of the pineal gland.

MENTOR OF GRADUATE THESIS

2023- present. Francisco Ocaranza. Doctorado en Neurociencias, Instituto de Neurociencias. Universidad de Valparaíso. “Importance of neuroinflammation initiated in the pregnant woman on the development of neuropsychiatric diseases in the offspring”.

2022-presente. Walter Vásquez. Doctor Ciencias Fisiológicas, PUC. “Participación de los hemicanales formados por conexina de los mioblastos en el cambio de compromiso miogénico hacia uno adipogénico en enfermedades inflamatorias crónicas”.

2021-2022. Juan Guiza. Doctorado en Ciencias Biológicas, mención Biología Celular y Molecular. Universidad de Antofagasta. " Identification and characterization of a non-selective channel formed by the unnexin of the pathogenic protozoan Trypanosoma cruzi".

2020-2023. Claudia García. Doctorado en Neurociencias, Instituto de Neurociencias. Universidad de Valparaíso. "Improving current treatment of epilepsy considering hemichannel-mediated neuroinflammation."

2012-2021. Elsa Fritz (Co-tutor, Dr. Jorge Campusano) Doctor Ciencias Fisiológicas, PUC. "Role of innexins in behavior coordinated by the circadian cycle of Drosophila melanogaster".

2012-2020. Ximena López. Doctor Ciencias Fisiológicas, PUC. "Role of hemichannels formed by Pannexin 1 in the inhibition of CD4+ T lymphocyte activation by adenosine".

2011-2016. Bruno Cisterna. Doctor Ciencias Fisiológicas, PUC. "Role of connexin hemichannels in muscle atrophy induced by denervation".

2013-2017. Gonzalo Gómez, Doctor Ciencias Fisiológicas, PUC. " The RhoA/ROCK pathway regulates the activity of hemichannels and gap junction channels formed by Cx43 in renal injury due to Angiotensin II"

2013-2018. Dusan Recordón, Doctor Ciencias Fisiológicas, PUC. "Purinergic signaling in the vasculogenic imitation process".

2009-2016. Carola Marturana, Doctor Ciencias Fisiológicas, PUC. "Participation of hemichannels formed by pannexin 1 of oligodendrocytes in unmyelination during prenatal stress".

2011-2018. Anibal Vargas, Doctor Ciencias Fisiológicas, PUC. "Participation of Hemichannels formed by Connexins in muscle atrophy induced by cachexia".

2009-2017. Paloma Hacha, Doctor ciencias Fisiológicas, PUC. "Participation of Hemichannels formed by Connexins in muscle atrophy induced by cachexia"

2012-2014. Carolina Urrutia- Activation of hemichannels formed by connexins promotes Ca^{2+} influx, oxidative stress and cell death, which is prevented by antioxidant agents that block hemichannels". Master in Science: Free Radicals and Biomedicine". University of Valparaíso.

2009-2013. Maximiliano Rovegno. (Co-mentorship with Dra. Rommy von Benhardi). Doctorado en Ciencias Médicas, PUC. "Inflammatory activation in astrocytes induced by ATP released via hemichannels formed by connexin, in an in vitro study model of brain trauma (TBI)".

2009-2013. Raúl Lagos Cabré. (Co-mentorship with Dr. Ricardo Moreno). Doctorado en Ciencias Fisiológicas, PUCC. "Modulation of ADAM family proteins by xenoestrogens induces apoptosis in male germ cells".

2009-2014. Daniela Salas. (Co-mentorship with Dr. Sergio Lavandero). "Doctorado en Bioquímica, Universidad de Chile. "Regulation of cardiac Cx43 by insulin".

2008-2012. Pablo J. Sáez. Candidato a Doctor Ciencias Fisiológicas, PUC. "Regulation and function of hemichannels and gap junctions in the interaction of dendritic cells and T lymphocytes".

2009-2012. Vania Figueroa. (Co-mentorship with Dr. Agustín Martínez). Doctorado en Neurociencias, Universidad de Valparaíso. "Activation of hemichannels formed by hCx26 and hPx1, in physiological and pathological conditions and its possible role in the etiopathogenesis of deafness"

2008-2012. Luis A. Cea. Doctor Ciencias Fisiológicas, PUC. "Muscle activity controls the levels of connexins 39, 43 and 45 in rat skeletal muscle".

2008-2011. Kenji Shoji. Doctor Ciencias Fisiológicas, PUC. "T lymphocytes present hemichannels formed by Panx1 coupled to P2X₇ receptors and mediate lymphocyte death initiated by extracellular ATP".

2008-2013. Romina Hernández (Co-tutor con Dra. M.V. Velarde). Candidato a Doctor Ciencias Fisiológicas, PUC. “Effect of boldine on diabetic nephropathy in rats”.

2008-2010. Juan A. Orellana. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. “Role and regulation of astroglial channels formed by connexin43 in neuronal death induced by hypoxia in high glucose: potentiation by neurodegenerative agents”.

2005-2010. Manuel A. Riquelme. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. Papel de los hemicanales formados por la Panexina1 y del ATP extracelular durante la adquisición del compromiso miogénico y la potenciación de la contracción muscular esquelética adulta.

2003-2008. Carolina Gatica de la Puente. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. “Role of hemichannels and gap junction channels in neuronal differentiation and in the acquisition of myogenic commitment in cell lines”.

2005-2008. Helmuth Sánchez. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. “Participation of channels formed by connexin32 in cellular responses of two in-vitro ischemia-reperfusion models”.

2007-2008. Kurt A. Schalper. Doctor en Ciencias Médicas, PUC. “Functional modulation of hemichannels formed by connexins by stimuli of different nature”.

2003-2005. Mauricio A. Retamal. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas. PUC. “Hemichannels formed by connexin43 are sensitive to changes in redox potential”.

2003-2005. (Co-mentorship with Dra. V. Abudara) Mauricio Garré. Maestría en Biología, opción Neurociencias. PEDECIBA, Uruguay. “Effects of fibroblast factor FGF-1 on intercellular communication through gap junctions in the neurotoxic reactive phenotype of spinal astrocytes”.

2001-2005. Loreto P. Véliz. (Co-mentorship with Dr. M. Boric) Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. "Expression and function of gap junctions between leukocytes and endothelial cells during inflammation".

1999-2003. Sra. Liliana Corvalán. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. "Gap junctions at contacts between dendritic cells and between dendritic cells and T lymphocytes".

1999-2003. Dr. Jorge Contreras. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. "Biophysical properties and mechanisms of action of the hemichannels formed by connexin 43: possible participation in ischemia-induced cell death".

1999-2004. Roberto Araya. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. "Role of purinergic receptors and gap junctions in the differentiation process of skeletal muscle".

1998-2001. Dr. Eliseo A. Eugén. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas, PUC. "Gap junctions between macrophages: identification of connexins, regulation of their expression and their function in metabolic and cellular processes".

1997-2000. Dr. María C. Brañes. Doctor en Ciencias Biológicas, mención, Biología Celular y Molecular. PUC. "Neutrophils and endothelial cells form homo- and heterocellular gap junctions regulated by proinflammatory factors".

1996-1998. Dr. Hernán González. Doctor en Ciencias Médicas. PUC. "Efecto de la endotoxemia sobre las uniones en hendidura del hígado de la rata".

1996-1999. Dr. Agustín Martínez. Doctor en Ciencias Biológicas, mención Ciencias Fisiológicas. PUC. “In vitro regulation of glial cell gap junctions in response to conditions that trigger an inflammatory process and mediators of the inflammatory response”.

1989-1992. Dr. Viviana M. Berthoud, Ph.D. in Sciences. “Regulation of Gap Junctions”. Department of Neuroscience, Albert Einstein College of Medicine, Nueva York, E.E.U.U.

Mentor of Postdoctoral fellows:

Dr. Magdiel A. Salgado. “Rol de canales formados por Panx1 en la formación de un endosoma viral-virus SARS-CoV-2 como modelo de estudio”. (2021-2024).

Dr. Nicolás Palacios-Prado. Endogenous Pannexin1 forms functional gap junction channels with unique biophysical properties (2018-2021).

Dr. Iván Bravo. Involvement of connexin hemichannels expressed by glial cells in depression (2018-2020).

Dr. Iván Barría. Role of connexin-based channels expressed by glia in the cochlea under inflammatory conditions (2018-2020)

Dr. Rosalba Escamilla. Role of hemichannels in oligodendrocytes of neuroinflammatory diseases (2014-2021).

Dra. Elisa Balboa. Proyecto Fondecyt. “Relevance of oxidative stress, mitochondrial dysfunction and expression of connexins in the induction of muscle atrophy by dexamethasone”. (2014-2017).

Dr. Carlos Puebla. Role of hemichannels in membrane transport and regulation by PUFAs. (2011-2014).

Dr. Adam Aguirre. Regulation of hemichannels in brain cells by viral infections (2012-2016).

Dr. José L. Vega. Regulation of hemichannels by protein phosphorylation (2011-2013).

Dr. Luis A. Cea. Regulation and function of hemichannels in diseases of skeletal muscles (2012-2013).

Dr. Juan A. Orellana. Role of hemichannels in HIV infections (2010-2011).

Dr. Mauricio Retamal Regulation of connexin-based channels by inflammatory conditions (2006-2007).

Dr. Claudia G. Sáez. Regulation of hepatic gap junction by chronic fibrosis (1993-1996).

PREVIOUS FUNDING:

Continuously funded by NIH (1988-1996).

Continuously funded by Fondecyt (1993-present).

INSERM-CONICYT (2007-2008).

ECOS-CONYCT, (2011-2013).

DAAD-CONICYT (2010-2011)

National Institute of Neurological Disorders and Stroke (2008-2012) (Co-investigator). Project Title: Cx43

Hemichannels: Gating Modification and Functions

Nucleo Milenio Inmunología e inmunoterapia. P04/030F (2006-2008) aprobada la renovación (2009-2011) (Co-investigador).

DAAD-CONICYT (2010-2011) Biological functions of connexin45 and pannexin1 hemichannels for contraction and inflammatory response of skeletal muscles in mice.

Proyecto Anillo ACT71 (2010-2013) (Director). Pro-inflammatory conditions increase the cell membrane permeability through pathways that offer new therapeutic target for human diseases.

FONDEF D07I1086 (2008-2013) (Investigador Principal). “
Improvement of molecular inhibitors for hemichannels for use as anti-inflammatory compounds in human diseases.
As coinvestigator of FONDECYT projects.

01-04-2016/31-03-2020 PI: JA Orellana.

Co-inv.: Sáez, J.C., Stehberg, J., Quintanilla, R.A., Von Bernhardt, R.

Disentangling the role of hemichannels and pannexons on astroglial and neuronal dysfunction induced by heavy ethanol exposure

01-04-2021/31-03-2025 JA Orellana.

Co-inv.: Sáez, J.C., Cerpa, W., Quintanilla, R.A., Von Bernhardt, R.

An independent grant focused in understand the role of hemichannels and pannexons in the alcohol-induced dysfunction of astrocytes and neurons in culture cells, brain slices and animal models.

Current Funding

ANID Regular 1231523 (Principal Investigator) 2023-2027). Functional properties and phosphorylation-dependent regulation of cx36 hemichannels.

ANID Regular 1191329 (Principal Investigator) (2019-2023). Diverse cell types present pannexin1-based gap junction channels with distinct regulatory, functional and pharmacological properties.

ANID Regular 1210375 (Co-Investigator) (2021-2025). Distaling the role of hemichannels and pannexons on astroglial and neuronal dysfunction induced by heavy ethanol exposure.

--

Millenium Institute, Centro Interdisciplinario de Neurociencias de Valparaíso. P09-022-F (2011-2021) Associate Investigator.

GRANTED PATENT

United States Patent (10) Patent No.: US 11,707,459 B2

Method for treating nervous system injuries using boldine and derivatives and thereof.

Inventors: Christopher Cardozo, Bronx, NY (US); Carlos A. Toro Chacon, Bronx, NY (US); Zachary Graham, Birmingham, AL (US); Wei Zhao, Bronx, NY (US); Juan C. Saez, Vina del Mar (CL)

PATENT APPLICATIONS

-Sáez JC, Maturana C y Lagos C.

“Inhibidores selectivos de hemicanales formados por conexinas para el tratamiento de la epilepsia.” en nombre de Pontificia Universidad Católica de Chile, de acuerdo a la siguiente información:

Número de Solicitud: **US 62/129432**

Fecha de presentación: **06-03-2015**

-Sáez JC, Lagos C.

Solicitud de patente “Nuevos moduladores de hemicanales de conexinas” en nombre de Pontificia Universidad Católica de Chile, de acuerdo a la siguiente información:

Número de Solicitud: **PCT/CL2015/050012**

Fecha de presentación: **14-04-2015**

-Sáez JC, Lagos C

“Moduladores específicos de hemicanales de conexinas”

INAPI Solicitud **2014:01556**.

SPIN OFF

“CONNECTOMICA SPA” and “CONNECTOMICA Inc.”

DOCENCIA DE POST GRADO

Docencia

2019-presente- Curso troncal de Neurociencias desde el 2019 una clase y un seminario.

2020-presente. Curso Fundamentos de Biología. Doctorado en Ingeniería y Ciencias. Tres clases y un seminario.

Tutor de Unidades de Investigación

- 2019.** Unidad de Investigación Doctorado en Neurociencias. Claudia García.
2021. Unidad de Investigación Doctorado en Neurociencias. Stefani Ordenes.

Tesis Doctoral en curso

- 2020-presente.** Director de tesis de Doctorado en Neurociencias Claudia García

Miembro de comités evaluador de tesis

- 2019.** Miembro del comité de tesis Doctoral. Paula Mujica. Doctorado en Neurociencias.
2019. Miembro de comité de tesis Magister. Justin Taylor. Magister en Neurociencias.
2021 Miembro comité de tesis Doctoral. Juan José Alvear. Doctorado en Ciencias, mención Biofísica y Biología Computacional.

Tutor de post doctorantes

- 2018-2020.** Tutor de Post doctorante Iván Bravo. Proyecto Milenio.
2021-2023. Tutor de Post doctorante Magdiel Salgado. Proyecto ANID
2018-2021 Tutor Post doctorante Nicolás Palacios-Prado. Proyecto ANID.

ACTIVIDADES DE POST GRADO EXTERNAS A LA UV

Docencia

- 2018-presente.** Curso troncal de Neurociencias, Doctorado en Neurociencias, PUCV. Una clase y un seminario.

Tesis Doctoral en curso

- 2018-presente.** Co-tutor de tesis. Sr. Juan Guiza. Doctorado en Ciencias Biológicas. Universidad de Antofagasta.

Director de tesis Doctoral

- 2020.** Director de tesis Doctoral en Fisiología PUCV Terminada. Ximena López 2020.
2021. Director de tesis Doctoral en Fisiología PUCV Terminada. Elsa Fritz 2021.

Unidad de Investigación

- 2021** Unidad de Investigación Doctorado en Fisiología PUCV. Walter Vásquez.

Miembro de comité evaluador de tesis doctoral.

- 2020 Arles Urrutia.** Doctorado en Genómica Integrativa. Universidad Mayor
2021 Claudia Pareja. Doctorado en Biotecnología Universidad Andrés Bello.
2021 Katherine Zepeda, Doctorado en Farmacología, Universidad de Chile.