

Datos Personales

Nombre Vicente Medel
Nacionalidad Chileno

Educación

- 2010–2015 **Licenciatura en Filosofía**, *Universidad de Chile*, Santiago
Egresado con Distinción Máxima
- 2017–2018 **Magister en Neurociencia**, *Pontificia Universidad Católica de Chile*, Santiago
Egresado con Distinción Máxima
- 2017–2021 **Doctorado en Neurociencia**, *Pontificia Universidad Católica de Chile*, Santiago
Egresado con Distinción Máxima

Experiencia

- 2025– **Investigador Principal**, PROFESOR ASISTENTE, Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile
Santiago, Chile
- 2022–2025 **Investigador Principal**, PROFESOR ASISTENTE EN EL LATIN AMERICAN BRAIN HEALTH INSTITUTE (BRAINLAT), Facultad de Psicología, Universidad Adolfo Ibáñez
Santiago, Chile
- 2021–2022 **Investigador Postdoctoral**, NEUROIMAGING ANALYSES AND COMPUTATIONAL MODELING, PO-0000325857, Directores: James M. Shine y Robert D. Sanders, Brain and Mind Centre
University of Sydney
- 2021–2022 **Investigador Postdoctoral**, FONDEF: AUDIOLOGICAL TEST DETECTS THE PRESENCE OF EARLY COGNITIVE DECLINE IN OLDER ADULTS, Directores: Gonzalo Farías y Paul Delano, Facultad de Medicina, Departamento de Neurociencias
Universidad de Chile
- 2021–2022 **Investigador Postdoctoral**, FONDECYT: AUDITORY EFFERENT CORTICOFUGAL OSCILLATORY MODULATION OF COCHLEAR AND AUDITORY-NERVE RESPONSES IN TINNITUS PERCEPTION: A BASIC AND CLINICAL APPROACH, Director: Paul Delano, Facultad de Medicina, Departamento de Neurociencias
Universidad de Chile

- 2016 **Research Intern**, EITN, FP7 FET flagship, Human Brain Project, "Model of Up-Down states in awake-sleep transition in humans", European Institute for Theoretical Neurosciences - Alain Destexhe Lab
Paris, France

Docencia y tesis

- 2025 **Profesor de Cátedra**, PSICOLOGÍA BASADA EN LA EVIDENCIA Y METODOLOGÍA DE LA INVESTIGACIÓN, 1° Año, Facultad de Psicología
Universidad Adolfo Ibañez
- 2025 **Profesor de Cátedra**, NEUROCIENCIA COMPUTACIONAL, Magister en Neurociencia Social, Facultad de Psicología
Universidad Adolfo Ibañez
- 2024-2025 **Profesor de Cátedra**, MÉTODOS DE INVESTIGACIÓN CUANTITATIVA I, 1° Año, Facultad de Psicología
Universidad Adolfo Ibañez
- 2022- **Tutor de Tesis PhD**, NEUROMODULATION OF BRAIN STATE ON SUSTAINED ATTENTION, Tomás Bosch, Doctorado en Neurociencias
Pontificia Universidad Católica de Chile
- 2021- **Tutor de Tesis PhD**, THE ROLE OF SYSTEMS-LEVEL METABOLISM AND THE BRAIN'S GLYMPHATIC SYSTEM: A STRUCTURAL, FUNCTIONAL AND COGNITIVE CHARACTERIZATION, Ana Maria Castro, BrainLat, Programa de Doctorado en Neurociencia Social
Universidad Adolfo Ibañez
- 2025- **Tutor de Tesis de Magister**, BRAIN-HEART COUPLING UNDER COGNITIVE LOAD: LINKING APERIODIC EEG AND HRV, Martin Montesinos, Escuela de Psicología, Magister en Neurociencia Social y Cognitiva
Universidad Adolfo Ibañez
- 2025- **Tutor de Tesis de Magister**, FEASIBILITY AND MULTIMODAL MARKERS OF COGNITIVE CONTROL: AN AUDITORY MULTI-SOURCE INTERFERENCE TASK (MSIT), Lukas Valenzuela, Escuela de Psicología, Magister en Neurociencia Social y Cognitiva
Universidad Adolfo Ibañez
- 2025- **Tutor de Tesis de Pregrado**, IMPACTO DE LA KETOSIS EN LA ACTIVIDAD NEURONAL: UNA CARACTERIZACIÓN DEL ROL FUNCIONAL DE LOS CUERPOS CETÓNICOS USANDO ENCEFALOGRAFÍA NO INVASIVA EN HUMANOS, Felipe Gonzalez, Facultad de Química y Farmacia
Pontificia Universidad Católica de Chile
- 2023-2024 **Co-tutor de Tesis de Magister**, ANALYZING EEG LEMPEL-ZIV COMPLEXITY IN FOCUS ATTENTION AND OPEN MONITORING MEDITATION: AN EVALUATION OF ITS IDEONITY FOR BIOMARKER OF STATE OF CONSCIOUSNESS, Mario Rosenberg, Escuela de Psicología, Magister en Neurociencia Social y Cognitiva
Universidad Adolfo Ibañez

- 2021-2023 **Tutor de Tesis de Magister**, VOLUMETRIC ALTERATION OF THE CEREBRAL SUBCORTEX AND ITS RELATION WITH WHITE MATTER LESIONS IN A COHORT OF OLDER ADULTS, Victor Vidal, Facultad de Medicina, Magister en Neurociencia. Egresado con Distinción Máxima
Universidad de Chile
- 2020-2021 **Tutor de tesis de pregrado**, CORRESPONDENCE BETWEEN PROTEIN DISTRIBUTION AND GENE EXPRESSION REVEALED BY PET AND POST-MORTEM QUANTIFICATION OF THE NOREPINEPHRINE TRANSPORTER (NET), Vicente Figueroa (Distinción Máxima), Facultad de Ciencias Biológicas
Pontificia Universidad Católica de Chile

Financiamiento y premios

- 2025-2028 Alzheimer's Association Research Grant. PIs: Enzo Tagliazucchi y Vicente Medel. AARG-D, "Whole-brain modeling of neurovascular pathways to neurodegeneration".
- 2025-2028 FONDECYT de Inicio. PI: Vicente Medel. FONDECYT de Inicio 11251578, Functional Magnetic Resonance Spectroscopy of Lactate in Aging across arousal and cognitive demand.
- 2024-2028 FONDECYT de Exploración. PI: Vicente Medel. FONDECYT de Exploración 13240170, Neurovascular pathways in aging and neurodegenerative diseases: integrating cardiovascular health and brain function.
- 2024 Premio al Investigador Transdisciplinar del año, Universidad Adolfo Ibáñez.
- 2023-2024 IBRO Collaborative Research Grant. PI: Vicente Medel, Co-PI: James M. Shine.
- 2023-2024 FONDECYT Postdoctoral, PI: Vicente Medel. Universidad Adolfo Ibáñez, Chile
- 2023 Young Researcher Award. Association for Research in Otolaryngology, USA
- 2022 Young Neuroscientist Award, Sociedad Chilena de Neurociencia 2022. Pucón, Chile
- 2019 Best Oral Presentation, Sociedad Chilena de Neurociencia 2019. La Serena
- 2018-2021 Beca CONICYT para estudios doctorales en Chile
- 2017-2018 Beca VRI. Pontificia Universidad Católica de Chile
- 2016 Premio "Chilean Interns" para participar del programa internacional de la École des Neurosciences Paris - ENP.

Publicaciones

- 2026 Publicada - Boncompte, G.; Irani, M.; Lachaux, JP; Ossandon, T.*; **Medel*, V.** - *Aperiodic exponent of brain field potentials is dependent on the frequency range it is estimated*. IEEE Transactions on Neural Systems and Rehabilitation Engineering.
- 2025 Publicada - San Martín*, S; **Medel*, V.**; Breinbauer, H; Delgado, C; Delano, P - *Increased basal ganglia volume in older adults with tinnitus*. Scientific Reports.
- 2025 Publicada - Amoruso, L; Hernandez, H; Santamaria-Garcia, H; Moguilner, S; ...; **Medel, V.**; ...; Ibáñez, A. - *Multilingualism protects against accelerated aging in cross-sectional and longitudinal analyses of 27 European countries*. Nature Aging.

- 2025 Publicada - Lehue, F; Coronel-Oliveros, C; **Medel, V.**; Liebe, T; Kaufmann, J; Orellana, S; Becerra, D; Tagliazucchi, E; Orio, P - *Noradrenaline and Acetylcholine shape Functional Connectivity organization of NREM substages: an empirical and simulation study*. PLOS Computational Biology.
- 2025 Publicada - Coronel.Oliveros, C; Migeot, J; Lehue, F; Amoruso, L; ...; **Medel, V.**; ...; Ibañez, A. - *Creative experiences and brain clocks*. Nature Communications.
- 2025 Publicada - Hazelton, J; Migeot, J; Gonzalez-Gomez, R; ...; **Medel, V.**; ...; Ibañez, A. - *Cardiovascular risk factors and the allostatic interoceptive network in dementia*. Cardiovascular Research.
- 2025 Publicada - Coronel-Oliveros, C; Moguilner, S; Hernandez, H; Cruzat, J; Baez, S; **Medel, V.**; ...; Ibañez, A. - *Diversity-sensitive brain clocks linked to biophysical mechanisms in aging and dementia*. Nature Mental Health.
- 2025 Publicada - Hernandez, H; Santamaria-Garciam H; Moguilner, S; ...; **Medel, V.**; ...; Ibañez, A. - *The exposome of healthy and accelerated aging across 40 countries*. Nature Medicine.
- 2025 Publicada - Altschuler, F; Canziani, V; Fraile-Vazquez, M; ...; **Medel, V.**; Ibañez, A; Gonzalez-Campo, C. - *White matter hyperintensities and their impact in brain structure and function in alzheimer's disease and behavioral variant frontotemporal dementia across Latin America and the United States: a cross-sectional study*. Alzheimer's Research & Therapy.
- 2025 Publicada - Franco-O'Byrne, D; Castro-Laguardia, AM; Delgado, C; Shine, JM; Huepe, D; , Gonzalez-Gomez, R; Tagliazucchi, E; Gonzalez-Campo, C; Ibañez, A; **Medel, V.** - *Cardiometaabolic state links neurovascular burden with brain structure and function: Evidence from EEG and MRI*. Neuroimage.
- 2025 Publicada - **Medel, V.**; Alliende, LM; ...; Crossley, NA - *Human development, inequality, and their associations with brain structure across 29 countries*. European Psychiatry.
- 2025 Publicada - Wainstein, G; Whyte, C; Martens, K; Muller, E; **Medel, V.**; Anderson, B; Stöttinger, E; Danckert, J; Munn, B; Shine, JM - *Gain neuromodulation mediates perceptual switches: evidence from pupillometry, fMRI and RNN modelling*. eLife.
- 2025 Published - Orlando, I; Tan, J; Taylor, N; **Medel, V.**; Wainstein, G; Lewis, S; Shine, JM & O'Callaghan, C. - *Dopamine alters functional gradients in Parkinson's disease*. Imaging Neuroscience
- 2025 Published - Gonzalez-Gomez, R; Cruzat, J; Hernandez, H; ...;**Medel, V.**; ...; & Ibañez, A.- *Qualitative and quantitative educational disparities and brain signatures in healthy aging and dementia across global settings*. eClinicalMedicine.
- 2025 Published - Legaz; A.; Altschuler, F; Gonzalez-Gomez, R; Hernandez, H; Baez, S; Migeot, J; Fittipaldi, S; **Medel, V.**; ... & Ibanez, A. - *Structural inequality linked to brain volume and network dynamics in aging and dementia across the Americas*. Nature Aging.

- 2025 Published - Santamaria-Garcia, H; Migeot, J; **Medel, V.**; Hazelton, J; Teckentrup, V; Romero-Ortuno, R; Piguet, O; Lawlor, B; Northoff, G & Ibanez, A. - *Allostatic Interceptive Overload Across Psychiatric and Neurological Conditions*. Biological Psychiatry.
- 2024 Publicada - Taylor, J; Robledo, K; **Medel, V.**; Heller, G; Payne, T; Wehrman, J; Casey, C; Yang, PF; Krause, BM; Lennertz, R; Naismith, S; Teixeira-Pinto, A; Sanders, RD - *Association between surgical admissions, cognition, and neurodegeneration in older people: UK Biobank prospective population-based study*. The Lancet Healthy Longevity.
- 2024 Published - Moguilner, S.; Baez, S.; ...**Medel, V.**; ... & Ibanez, A. - *Brain clocks capture diversity and disparities in aging and dementia across geographically diverse populations*. Nature Medicine.
- 2024 Published - Gonzalez-Gomez, R.; Legaz, A.; ...**Medel, V.**; ... & Ibañez, A. - *Educational disparities in brain health and dementia across Latin America and the United States*. Alzheimer's & Dementia.
- 2024 Published - Hernandez, H; Baez, S; **Medel, V.**; ... Ibañez, A - *Brain health in diverse settings: How age, demographics and cognition shape brain function*. Neuroimage.
- 2024 Published - Coronel-Oliveros, C; **Medel, V.**; Orellana, S; Rodiño, J; Lehue, F; Cruzat, J; Tagliazucchi, E; Brzezicka, A; Orio, P; Kowalczyk-Grebska, N; Ibañez, A - *Gaming expertise induces meso-scale brain plasticity and efficiency mechanisms as revealed by whole-brain modeling*. Neuroimage.
- 2024 Published - Coronel-Oliveros, C; ...; **Medel, V.**; ...; & Ibañez, A - *Viscous dynamics associated with hypoexcitation and structural disintegration in neurodegeneration via generative whole-brain modeling*. Alzheimer's & Dementia.
- 2024 Published - Donoso-San Martín, R; Leiva, A; Dragicevic, CD; **Medel, V.** & Delano, PH - *The corticofugal oscillatory modulation of the cochlear receptor during auditory and visual attention is preserved in tinnitus*. Frontiers in Neural Circuits.
- 2024 Published - Moguilner S; Herzog R; Perl YS; **Medel V.**, Cruzat J; Coronel C; Kringelbach M; Deco G; Ibáñez A; Tagliazucchi E - *Biophysical models applied to dementia patients reveal links between geographical origin, gender, disease duration, and loss of neural inhibition*. Alzheimer's Research & Therapy.
- 2024 Published - Herrada, J*; **Medel, V.***; Dragicevic, C; Maas, JC; Stott, CE; Delano, PH - *A frequency peak at 3.1kHz obtained from the spectral analysis of the cochlear implant electrocochleography noise*.
- 2024 Published - Coronel-Oliveros, C; **Medel, V.**; Whitaker, GA; Astudillo, A; Gallagher, D; Z-Rivera, L; Prado, P; El-Deredy, W; Orio, P; and Weinstein, A - *Elevating understanding: Linking high-altitude hypoxia to brain aging through EEG functional connectivity and spectral analyses*. Network Neuroscience.
- 2024 Published - **Medel, V.**; Delano, PH; Belkhiria, C; Leiva, A; De Gatica, C; Vidal, V; Navarro, C; San Martin, S; Martinez, M; Gierke, C; Garcia, X; Cerda, M; Vergara, R; Delgado, C; Farias, G - *Cochlear dysfunction as an early biomarker for cognitive decline in normal hearing and mild hearing loss*. Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring.

- 2024 Published - Prado, V*; **Medel, V.***; ...; and Ibañez, A - *The BrainLat project, a multimodal neuroimaging dataset of neurodegeneration from underrepresented backgrounds*. Scientific Data.
- 2023 Published - **Medel, V.**; Irani, M; Crossley, NA; Ossandón, T; Boncompte, G - *Complexity and 1/f slope jointly reflect brain states*. Scientific Reports.
- 2023 Published - Pozo, N; Romero, C; Andrade, M; Delano, PH; **Medel, V.**; Troncoso, M; Orellana, P; Rodriguez, MI; Fabres, C; Delgado, C - *Exploring the relationship between frailty and executive dysfunction: the role of frontal white matter hyperintensities*. Frontiers in Aging Neuroscience.
- 2023 Published - Munn, B; Muller, E; **Medel, V.**; Naismith, SL; Lizier, R; Sanders, RD; Shine, JM - *Neuronal connected burst cascades bridge macroscale adaptive signatures across arousal states* Nature Communications.
- 2023 Published - Zugman, A; Alliende, L*; **Medel, V.***; ... and Crossley, NA* - *Country-level gender inequality is associated with structural differences in the brains of women and men*. PNAS.
- 2022 Published - Coronel, C; Gießing, C; **Medel, V.**; Cofré, R; Orio, P - *Whole-brain model of context-dependent effects of cholinergic neuromodulation on functional network properties*. Neuroimage.
- 2022 Published - **Medel, V.**; Crossley, NA; Gajardo, I; Muller, E; Barros, F; Shine, JM; Sierralta, J - *Whole-brain MCT2 Lactate transporter gene expression links metabolism to human brain structure and function*. PNAS.
- 2022 Published - Brouwer, R; ... **Medel, V.**; ... and Pol, H - *Genetic variants associated with longitudinal changes in brain structure across the lifespan*. Nature Neuroscience.
- 2021 Published - Wainstein, G; Rojas-Líbano, D; **Medel, V.**; ... and Shine, J - *The ascending arousal system promotes optimal performance through meso-scale network integration in a visuospatial attentional task*. Network Neuroscience.
- 2021 Published - Boncompte, G; **Medel, V.**; Cortinez, I; Ossandón, T - *Brain activity complexity follows a non-linear relation with level of sedation during propofol induction*. The British Journal of Anesthesia.
- 2020 Published - Ramirez-Mahaluf, JP; **Medel, V.**; ... and Crossley, NA - *Transitions between human functional brain networks reveal complex, cost-efficient and behaviorally-relevant temporal paths*. NeuroImage.
- 2019 Published - **Medel, V.**; Valdés, J; Castro, S; Ossandón, T; Boncompte, G - *Commentary: Amplification and Suppression of Distinct Brainwide Activity Patterns by Catecholamines*. Frontiers in Behavioral Neuroscience.

Divulgación

- 2025 **Medel, V**, Columna El Mostrador " *Cuando la ciencia se mira en el espejo del mercado*".
- 2025 **Medel, V**, Columna El Mostrador " *Lo que no se nombra no se investiga y lo que no se investiga no se soluciona*".
- 2025 **Medel, V**, UAI " *Vicente Medel: El cerebro encarnado y la experiencia humana*".

- 2024 **Medel, V**, Entrevista en programa online "*BrainLat, tu podcast a la mente*".
- 2023 **Medel, V**, Columna en Revista "La Tercera: Qué Pasa" titulada "*Desigualdad estructural y estructura cerebral*".
- 2022 **Medel, V**, Columna en Revista "La Tercera: Qué Pasa" titulada "*El combustible cerebral de nuestro día a día*".
- 2022 **Medel, V**, *Entrevista en Programa Radial "Aire Fresco"*. Radio Duna.
- 2020 Medel, R. and **Medel, V.**, *Moralidad Humana: ¿Culturalmente aprendida o innatamente heredada?* Revista Occidente.
- 2018, 2019 **Medel, V.**; *Castro, S* - Workshop: "A computational approach for neuroimaging analysis and Connectivity using Python" en el II y III Congreso en Robotics y Neuroscience, USM.
- 2017 **Medel, V.**, *El Insomnio y los Zeitgebers*. Revista Carcaj.
- 2016 **Medel, V.**, *Creatividad y copia*. Revista Carcaj and Revista Séptimo Arte.