Luis Concha

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Current Position

2012-Present — Associate Professor
Head of the Brain Connectivity Laboratory
Institute of Neurobiology
National Autonomous University of Mexico (UNAM)
Campus Juriquilla
Querétaro.

Affiliations

2011- — Associate Member. International Laboratory for Brain, Music and Sound Research (BRAMS). University of Montreal and McGill University. Montreal, Canadá.

Past positions

2010-2012 — Assistant Professor
Institute of Neurobiology
National Autonomous University of Mexico (UNAM)
Campus Juriquilla
Querétaro.

Education

2008-2010 — Post-doctoral fellowship
McConnel Brain Imaging Centre
Montreal Neurological Institute
McGill University
Supervisors: Dr. Andrea Bernasconi and Dr. Neda Bernasconi.

2003-2007 — Ph.D. Medical Sciences – Biomedical Engineering
University of Alberta
Supervisors: Dr. Christian Beaulieu and Dr. Donald W. Gross
Project: Diffusion Tensor Tractography of temporal lobe epilepsy.

1995-2001 — Medical School
School of Medicine, Autonomous University of San Luis Potosí, Mexico
Summa Cum Laude

Publications

Total	52
Citations	3205 (no self-citations)
h-factor	26

Sisodiya SM, Whelan CD, Hatton SN, Huynh K, Altmann A, Ryten M, Vezzani A, Caligiuri ME, Labate A, Gambardella A, *et al. The enigma-epilepsy working group: Mapping disease from large data sets.* Human Brain Mapping. 2020.

Segovia-Oropeza M, Santiago-Castañeda C, Orozco-Suárez S, Concha L, Rocha L. *Sodium cromoglycate decreases sensorimotor impairment and hippocampal alterations induced by severe traumatic brain injury in rats.* Journal of Neurotrauma, (ja). 2020.

Estrada JC, Ramirez-Manzanares A, Concha L, Marroquin JL. *Maximum smoothness consistent unwrapping of n-dimensional phase fields.* Optics and Lasers in Engineering, 130:p. 106087. 2020.

Rodríguez-Cruces R, Bernhardt BC, Concha L. *Multidimensional associations between cognition and connectome organization in temporal lobe epilepsy.* Neuroimage, p. 116706. 2020.

Niño SA, Chi-Ahumada E, Ortíz J, Zarazua S, Concha L, Jiménez-Capdeville ME. *Demyelination associated with chronic arsenic exposure in wistar rats.* Toxicol. Appl. Pharmacol., 393:p. 114955. 2020.

Angulo-Perkins A, Concha L. *Discerning the functional networks behind processing of music and speech through human vocalizations.* PloS one, 14(10). 2019.

Rojas-Vite G, Coronado-Leija R, Narvaez-Delgado O, Ramírez-Manzanares A, Marroquín JL, Noguez-Imm R, Aranda ML, Scherrer B, Larriva-Sahd J, Concha L. *Histological validation of per-bundle water diffusion metrics within a region of fiber crossing following axonal degeneration.* NeuroImage, p. 116013. **Cover image**. 2019.

Narvaez-Delgado O, Rojas-Vite G, Coronado-Leija R, Ramirez-Manzanares A, Marroquın JL, Noguez-Imm R, Aranda ML, Scherrer B, Larriva-Sahd J, Concha L. *Histological and diffusion-weighted magnetic resonance imaging data from normal and degenerated optic nerve and chiasm of the rat.* Data in Brief, p. 104399. 2019.

Cisneros-Mejorado AJ, Garay E, Ortiz-Retama J, Concha L, Moctezuma JP, Romero S, Arellano RO. *Demyelination-remyelination of the rat caudal cerebellar peduncle evaluated with magnetic resonance imaging.* Neuroscience. 2019.

Orduña-Ríos M, Noguez-Imm R, Godínez-Hernández NM, Cortés-Bautista AM, Escalante-López DD, Liedtke W, Martínez-Torres A, Concha L, Thébault S. *Trpv4 inhibition prevents increased water diffusion and blood-retina barrier breakdown in the retina of streptozotocin-induced diabetic mice.* PloS one, 14(5):p. e0212158. 2019.

Larriva-Sahd J, León-Olea M, Vargas-Barroso V, Varela-Echavarría A, Concha L. *On the existence of mechanoreceptors within the neurovascular unit of the rodent and rabbit brain.* Brain Struct Func, 224(6):p. 2247–267. 2019.

Whelan CD, Altmann A, Botía JA, Jahanshad N, Hibar DP, (...), Concha L, (...), Rodriguez-Cruces R, *et al. Structural brain abnormalities in the common epilepsies assessed in a worldwide enigma study.* Brain. 2018.

Rodríguez-Cruces R, Velázquez-Pérez L, Rodríguez-Leyva I, Velasco AL, Trejo-Martínez D, Barragán-Campos HM, Camacho-Téllez V, Concha L. *Association of white matter diffusion characteristics and cognitive deficits in temporal lobe epilepsy.* Epilepsy & Behavior, 79:p. 138–145. 2018.

Deleo F, Thom M, Concha L, Bernasconi A, Bernhardt BC, Bernasconi N. *Histological and MRI markers of white matter damage in focal epilepsy.* Epilepsy Research, 140(Supplement C):p. 29–38. 2018.

Olivares-Moreno R, Moreno-Lopez Y, Concha L, Martínez-Lorenzana G, Condés-Lara M, Cordero-Erausquin M, Rojas-Piloni G. *The rat corticospinal system is functionally and anatomically segregated.* Brain Structure and Function, p. 1–14. 2017.

Hernández-Pérez R, Cuaya L, Rojas-Hortelano E, Reyes-Aguilar A, Concha L, de Lafuente V. *Tactile object categories can be decoded from the parietal and lateral-occipital cortices.* Neuroscience, Accepted. 2017.

García-Gomar MG, Soto-Abraham J, Velasco F, Concha L. *Anatomic characterization of prelemniscal radiations by probabilistic tractography: Implications in parkinson's disease.* Brain Structure and Function, 222(1):p. 71–81. 2017.

Cuaya-Retana L, Hernández-Perez R, Concha L. *Our faces in the dog's brain: Functional imaging reveals temporal cortex activation during perception of human faces.* PLoS ONE, 11(3):p. e0149431. 2016.

Velasco F, Llanos S, Avila-Rodriguez MA, Avendaño-Estrada A, Soto J, Concha L, García Gomar MG, Carrillo-Ruiz JD. *Metabolic changes induced by electrical stimulation of prelemniscal radiations for the treatment of parkinson disease.* Stereotact Funct Neurosurg, 93(5):p. 333–341. 2015.

Armony JL, Aubé W, Angulo-Perkins A, Peretz I, Concha L. *The specificity of neural responses to music and their relation to voice processing: An fMRI-adaptation study.* Neurosci Lett. 2015.

Rodriguez-Cruces R, Concha L. *White matter in temporal lobe epilepsy: clinico-pathological correlates of water diffusion abnormalities.* Quantitative Imaging in Medicine and Surgery, (Publicado en línea previo a impresión). 2015.

Angulo-Perkins A, Aube W, Peretz I, Barrios F, Armony J, Concha L. *Music listening engages specific secondary cortical regions within the temporal lobes: Differences between musicians and non-musicians.* Cortex, 59:p. 126–137. 2014.

Rojas-Hortelano E, Concha L, de Lafuente V. *The parietal cortices participate in encoding, short-term memory, and decision-making related to tactile shape.* Journal of Neurophysiology, 112(8):p. 1894–1902. PMID: 24990569. 2014.

Moreno M, Concha L, Gonzalez-Santos L, Ortiz J, Barrios F. *Correlation between corpus callosum sub-segmental area and cognitive processes in school-age children.* PLoS ONE, 9(8):p. e104549. 2014.

Alexander R, Concha L, Snyder T, Beaulieu C, Gross D. *Correlations between limbic white matter and cognitive function in temporal lobe epilepsy, preliminary findings.* Frontiers in Aging Neuroscience, Accepted. 2014.

Aubé W, Angulo-Perkins A, Peretz I, Concha L, Armony J. *Fear across the senses: brain responses to music, vocalizations and facial expressions.* Social Cognitive and Affective Neuroscience, Accepted. 2014.

Bauer C, Diaz J, Concha L, Barrios F. *Sustained attention to spontaneous thumb sensations activates brain somatosensory and other proprioceptive areas.* Brain and Cognition, 87:p. 86–96. 2014.

Bauer CCC, Moreno B, González-Santos L, Concha L, Barquera S, Barrios FA. *Child overweight and obesity are associated with reduced executive cognitive performance and brain alterations: a magnetic resonance imaging study in mexican children.* Pediatric obesity. PMID: 24989945. 2014.

Concha L. *A macroscopic view of microstructure: Using diffusion-weighted images to infer damage, repair and plasticity of white matter.* Neuroscience, 276:p. 14–28. 2013.

Manjón J, Coupé P, Concha L, Buades A, Collins D, Robles M. *Diffusion weighted image denoising using overcomplete local PCA.* PLoS ONE, 8(9):p. e73021. 2013.

Liu M, Gross DW, Wheatley BM, Concha L, Beaulieu C. *The acute phase of wallerian degeneration: Longitudinal diffusion tensor imaging of the fornix following temporal lobe surgery.* Neuroimage, 74:p. 128–139. 2013.

Concha L, Kim H, Bernasconi A, Bernhardt BC, Bernasconi N. *Spatial patterns of water diffusion along wihite matter tracts in temporal lobe epilepsy.* Neurology, 79(5):p. 455–62. 2012.

Liu M, Concha L, Lebel C, Beaulieu C, Gross DW. *Mesial temporal sclerosis is linked with more widespread white matter changes in temporal lobe epilepsy.* NeuroImage: Clinical, 1(1):p. 99–105. 2012.

Liu M, Concha L, Beaulieu C, Gross DW. *Distinct white matter abnormalities in different idiopathic generalized epilepsy syndromes.* Epilepsia, 52(12):p. 2267–2275. 2011.

Bernhardt BC, Bernasconi N, Concha L, Bernasconi A. *Cortical thickness analysis in temporal lobe epilepsy: reproducibility and relation to outcome.* Neurology, 74(22):p. 1776–1784. 2010.

Wiltshire K, Concha L, Gee M, Bouchard T, Beaulieu C, Camicioli R. *Corpus callosum and cingulum tractography in parkinson's disease.* Can J Neurol Sci, 37(5):p. 595–600. 2010.

Concha L, Livy DJ, Beaulieu C, Wheatley BM, Gross DW. *In vivo diffusion tensor imaging and histopathology of the fimbria-fornix in temporal lobe epilepsy.* J Neurosci, 30(3):p. 996–1002. 2010.

Pyra T, Hui B, Hanstock C, Concha L, Wong J, Beaulieu C, Johnston W, Kalra S. *Combined structural and neurochemical evaluation of the corticospinal tract in amyotrophic lateral sclerosis.* Amyotrophic Lateral Sclerosis, 11:p. 157–165. 2010.

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without mesial temporal sclerosis. Journal of Neurology, Neurosurgery and Psychiatry, 80:p. 312–319. 2009.

Gong G, He Y, Concha L, Lebel C, Gross DW, Evans AC, Beaulieu C. *Mapping anatomical connectivity patterns of human cerebral cortex using in vivo diffusion tensor imaging tractography.* Cerebral Cortex, 19(3):p. 524–539. PMID: 18567609. 2009.

Bernhardt BC, Worsley KJ, Besson P, Concha L, Lerch JP, Evans AC, Bernasconi N. *Mapping limbic network organization in temporal lobe epilepsy using morphometric correlations: insights on the relation between mesiotemporal connectivity and cortical atrophy.* Neuroimage, 42(2):p. 515–524. 2008.

Muayquil T, Chan KM, Camicioli R, Hanstock C, Wong J, Concha L, Beaulieu C, Johnston W, Stenerson P, Kalra S. *Motor cortex and spinal degeneration in multisystem atrophy: A multimodal study.* The Canadian Journal of Neurological Sciences, 35(5):p. 658–660. 2008.

Malykhin N, Concha L, Seres P, Beaulieu C, Coupland NJ. *Diffusion tensor imaging tractography and reliability analysis for limbic and paralimbic white matter tracts.* Psychiatry Res, 164(2):p. 132–142. 2008.

Gong G, Shi F, Concha L, Beaulieu C, Gross DW. *Insights into the sequence of structural consequences of convulsive status epilepticus: A longitudinal mri study.* Epilepsia, 49(11):p. 1941–1945. 2008.

Gong G, Concha L, Beaulieu C, Gross DW. *Thalamic diffusion and volumetry in temporal lobe epilepsy with and without mesial temporal sclerosis.* Epilepsy Res, 80(2-3):p. 184–193. 2008.

Concha L, Beaulieu C, Wheatley BM, Gross DW. *Bilateral white matter diffusion changes persist after epilepsy surgery.* Epilepsia, 48(5):p. 931–940. 2007.

Wong JC, Concha L, Beaulieu C, Johnston W, Allen PS, Kalra S. *Spatial profiling of the corticospinal tract in amyotrophic lateral sclerosis using diffusion tensor imaging.* Journal of Neuroimaging, 17(3):p. 234–240. **Cover image**. 2007.

Gross DW, Concha L, Beaulieu C. *Extratemporal white matter abnormalities in mesial temporal lobe epilepsy demonstrated with diffusion tensor imaging.* Epilepsia, 47(8):p. 1360–1363. 2006.

Concha L, Gross DW, Wheatley BM, Beaulieu C. *Diffusion tensor imaging of time-dependent axonal and myelin degradation after*

corpus callosotomy in epilepsy patients. Neuroimage, 32(3):p. 1090–9. **Cover image**. 2006.

Beaulieu C, Plewes C, Paulson LA, Roy D, Snook L, Concha L, Phillips L. *Imaging brain connectivity in children with diverse reading ability.* Neuroimage, 25(4):p. 1266–71. 2005.

Concha L, Gross DW, Beaulieu C. *Diffusion tensor tractography of the limbic system.* AJNR Am J Neuroradiol, 26(9):p. 2267–74. 2005.

Concha L, Beaulieu C, Gross DW. *Bilateral limbic diffusion abnormalities in unilateral temporal lobe epilepsy.* Ann Neurol, 57(2):p. 188–196. 2005.

Book Chapters

Liu M, Concha L, Bernhardt BC, Bernasconi N, Bernasconi A. *Imaging White Matter Pathology in Epilepsy*, p. 68–76. Cambridge University Press. 2019.

Alonso-Vanegas M, Concha L. *Neuroimagen en epilepsia.* Rubo-Donnadieu F, Resendiz-Aparicio J, Alonso-Vanegas M, Senties-Madrid H (Editors), *Epilepsia*, p. 177–204. Editorial Alfil. 2016.

Angulo-Perkins A, Concha L. *Music perception: Information flow within the human auditory cortices.* Merchant H, Lafuente V (Editors), *Neurobiology of interval timing*, p. 293–303. Springer Nature. 2014.

Concha L, Jezierski M, Hall R. *Mala conducta cientifica y la publicacion.* Hall R (Editor), *Etica de la investigacion cientifica*, vol. 978-607-513-127-6. Universidad Autonoma de Queretaro. 2014.

Other publications

García-Gomar MG, Concha L, Alcauter S, Soto J, Carrillo-Ruiz J, Castro-Farfan G, Velasco-Campos F. *Probabilistic tractography of the posterior subthalamic area in parkinson's disease patients.* Journal of Biomedical Science and Engineering, 06(03):p. 381–390. 2013.

Concha L, Campos FV, Schulder M. *Comments on: Diffusion tensor imaging and colored fractional anisotropy mapping of the ventralis intermedius nucleus of the thalamus.* Neurosurgery, 69(5):p. 1129–1130. 2011.

Meeting presentations

Total 73

Rodriguez-Cruces R, Bernhardt BC, Concha L. *Multivariate links between cognition and structural-level connectomics in temporal lobe epilepsy.* Organization for Human Brain Mapping (OHBM). 2019.

Fajardo A, Rodriguez-Cruces R, Concha L. *Hippocampal functional connectivity associations with cognitive skills in temporal lobe epilepsy.* Organization for Human Brain Mapping (OHBM). 2019.

García-Saldívar P, de León C, Prado L, Concha L, Merchant H. *Gm longitudinal changes during training to tap in synchrony to a metronome in the rhesus monkey.* Organization for Human Brain Mapping (OHBM). 2019.

Gasca-Martínez D, Concha L, Marquez-Bravo L, Luna-Munguia H. *Hippocampal-related memory deficits in sprague-dawley rats with spontaneous ventriculomegaly.* Society for Neuroscience. 2019.

Narvaez-Delgado O, Coronado-Leija R, Rojas-Vite G, Aranda ML, Ramirez-Manzanares A, Marroquin JL, Larriva-Sahd J, Concha L. *Longitudinal evaluation of bundle-wise water diffusion changes following axonal degeneration in a region of fiber crossing.* International Society for Magnetic Resonance in Medicine. 2019.

Concha L, Marquez-Bravo L, Luna-Munguia H. *Longitudinal microstructural changes following status epilepticus in the rat pilocarpine model of epilepsy.* American Epilepsy Society, New Orleans. 2018.

Marquez-Bravo L, Concha L, Luna-Munguia H. *Longitudinal microstructural changes following status epilepticus in the rat pilocarpine model of epilepsy.* Congreso Latinoamericano de epilepsia, Costa Rica. 2018.

Rodriguez-Cruces R, Bernhardt BC, Concha L. *Links between brain connectivity and cognitive performance in temporal lobe epilepsy.* Society for Neuroscience. 2018.

Rodriguez-Cruces R, Bernhardt BC, Concha L. *Multidimensional cognitive subtyping in temporal lobe epilepsy: brain morphology and connectomics.* Organization for Human Brain Mapping. 2018.

Aquiles-Reyes A, Concha L, Luna-Munguia H. *Characterization of cortical dysplasia induced by carmustine in a model of chronic epilepsy.* Reunion de Neuroimagen, Guanajuato. 2018.

Coronado-Leija R, Ramírez-Manzanares A, JL M, Concha L. *On the estimation of the apparent bundle-wise diffusivity profiles for axon damage detection.* Reunion de Neuroimagen, Guanajuato. 2018.

Esqueda-Liquidano M, García-Gomar M, Concha L, Aguado-Carrillo G, Roldan-Valadez E, Velasco F. *Optimizing stereotactic coordinates of prelemniscal radiations as target for the treatment of parkinson's disease, individual variations in stereotactic location of fiber components.* European Society for Stereotactic and functional neurosurgery, Reino Unido. 2018.

Concha L, Rodriguez-Cruces R. *Epilepsia del lóbulo temporal: Del desempeño cognitivo a la conectividad cerebral.* Taller de Redes Multidisciplinarias. 2018.

Rocha L, Segovia-Oropeza M, Orozco-Suarez S, Concha L. *Sodium cromoglycate decreases hippocampal hyperexcitability and somatomotor deficit subsequent to severe traumatic brain injury in rats.* American Epilepsy Society, New Orleans. 2018.

Segovia-Oropeza M, Santiago-Castaneda S, Orozco-Suarez S, Concha L, Rocha L. *El cromoglicato de sodio disminuye la hiperexcitabilidad hipocampal y el daño motor subsecuente a un traumatismo craneoencefálico severo.* Congreso Latinoamericano de epilepsia, New Orleans. 2018.

Concha L, Larriva-Sahd J, Rojas-Vite G, Noguez-Imm R, Coronado-Leija R, Ramírez-Manzanares A, Marroquín JL. *Diffusion mri of axonal degeneration in areas of fiber crossing: Histological correspondence.* p. 1088. International Society for Magnetic Resonance in Medicine, Honolulu, Hawaii. 2017.

García-Gomar M, Concha L. *Conectividad del subtálamo en pacientes con parkinson.* Centro de Investigacion en Matematicas, Guanajuato, Mexico. 2016.

Rodríguez-Cruces R, Camacho-Tellez V, Barragán H, Concha L. *Association between white matter changes and cognitive deficits in patients with temporal lobe epilepsy,.* Society for Neuroscience, San Diego, CA. 2016.

Rodríguez-Cruces R, Camacho-Téllez V, Velázquez-Pérez M, Trejo-Martínez D, Barragán-Campos H, Rodríguez-Leyva I, Concha L. *White matter, subcortical gray matter and cognitive changes in temporal lobe epilepsy with and without mesial temporal sclerosis.* Latin American Congress of Epilepsy, Cancun, Mexico. 2016.

Camacho-Téllez V, Jiménez-Valverde L, Rodríguez-Cruces R, García Gomar M, Velázquez-Pérez L, Santiago-Rodríguez E,

Trejo-Martínez D, Barragán-Campos H, González-Olvera E, Atilano-Barbosa D, Concha L. *Working memory in tle patients: Correlations between cortical activity and psychometric evaluations.* American Epilepsy Society, Philadelphia. 2015.

Rodríguez-Cruces R, Velázquez Perez L, Camacho Tellez V, Atilano Barbosa D, González Olvera E, Santiago Rodríguez E, Trejo-Martinez D, Barragan H, Concha L. *Correlates of cognitive impairments with hippocampal volume and t2 relaxometry in temporal lobe epilepsy.* American Epilepsy Society, Philadelpha. 2015.

Cuaya L, Hernández-Pérez R, Concha L. *fMRI of human face perception in dogs.* Organization for Human Brain Mapping, Honolulu, Hawaii. 2015.

Wilke C, Angulo-Perkins A, Concha L. *Music rhythm modulates auditory and somatosensory cortices.* Organization for Human Brain Mapping, Honolulu, Hawaii. 2015.

Elliot C, Yasuda C, Concha L, Liu M, Wheatley M, Beaulieu C, Sankar T. *Progressive contralateral hippocampal atrophy following temporal lobe epilepsy surgery.* Canadian Neurological Sciences Federation, Canada. 2015.

García-Gomar M, Velasco F, Concha L. *Comparative study of anatomical connectivity of prelemniscal radiations in healthy subjects and Parkinson's disease patients.* International Society for Magnetic Resonance in Medicine, Toronto, Canada. 2015.

García-Gomar M, Velasco F, Concha L. *Comparative study of anatomical connectivity of prelemniscal radiations in healthy subjects and Parkinson's disease patients.* International Congress of Parkinson's Disease and Movement Disorders, San Diego, California. 2015.

Concha L. *Sistema para procesamiento de imágenes médicas.* Taller de Solución de Problemas; Centro de Investigación en Matemáticas, Guanajuato, Gto. 2015.

Concha L. *Caracterización de la microestructura de la substancia blanca mediante imágenes sensibles a difusión.* Centro de Investigación en Matemáticas, Guanajuato, Gto. 2015.

Camacho-Téllez V, Rodríguez-Cruces R, Velázquez-Pérez L, Trejo-Martínez D, Jiménez-Valverde L, Rodríguez-Leyva L Iand Concha-Loyola. *Memoria de trabajo en epilepsia del lóbulo temporal: resonancia magnética funcional y evaluaciones psicométricas.* Academia Mexicana de Neurología, Puerto Vallarta. 2015.

Rodríguez-Cruces R, Camacho Téllez V, Manjón J, Barragán H, Concha L. *Análisis cuantitativo de esclerosis hipocampal con resonancia magnética en la epilepsia del lóbulo temporal*. Academia Mexicana de Neurología, Puerto Vallarta. 2015.

Rodríguez-Cruces R, Camacho-Téllez V, Velázquez-Pérez M, Trejo-Martínez D, Barragán-Campos H, Rodríguez-Leyva I, Concha L. *Correlación entre volumen y relaxometría t2 del hipocampo y las alteraciones cognitivas en la epilepsia del lóbulo temporal*. Capítulo Mexicano de la Liga Internacional contra la Epilepsia, Mexico City. 2015.

Jiménez-Valverde L, Santiago E, Trejo D, Velázquez L, Romero-Romo J, Barragán-Campos H, Concha L. *Cortical activity related to working memory in temporal lobe epilepsy patients*. Organization for Human Brain Mapping, Hamburg, Germany. 2014.

Cuaya L, Concha L. *Can machines think? fMRI study of the turing test*. Organization for Human Brain Mapping, Hamburg, Germany. 2014.

Concha L. *Evaluación in vivo de la conectividad del subtálamo humano. Congreso Nacional de Ciencias Fisiológicas, Sociedad Mexicana de Ciencias Fisiológicas*. Tlaxcala, México. 2013.

Angulo-Perkins A, W Aube W, Peretz I, Barrios F, Armony J, Concha L. *Functional segregation in secondary auditory cortices during processing of music and speech: The effects of musicianship. Neurobiology of Language*. Neurobiology of Language, San Sebastián, Spain. 2012.

Bauer C, Díaz J, Concha L, Barrios F. *My I in the brain: Distinct cortical structures for offline or online body representations*. Organization for Human Brain Mapping (OHBM), Beijing, China. 2012.

Rodriguez-Leyva I, Renteria Palomo AA, Concha-Loyola L, Martinez-Mayorga A. *Analysis of eeg and mri for localization of structures affected in temporal lobe epilepsy*. American-Neurological-Association, Boston, MA. 2012.

Aube W, Angulo-Perkins A, Peretz I, Barrios F, Concha L, Armony J. *Brain responses to emotional music*. Organization for Human Brain Mapping, Quebec, Canada. 2011.

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Torres C, Pasaye E, Concha L, Barrios F. *Neural correlates of attitudinal evaluation: A fmri study of attitudes towards animals.* Organization for Human Brain Mapping, Quebec, Canada. 2011.

Moreno B, Concha L, Gonzalez-Santos L, Ortiz J, Barrios F. *Phonological awareness correlate with caudate nucleus and amygdala volumes in healthy children.* Organization for Human Brain Mapping, Quebec, Canada. 2011.

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Liu M, Concha L, Lebel C, Gross DW, Beaulieu C. *White matter abnormalities in temporal lobe epilepsy with and without mesial temporal sclerosis.* Organization for Human Brain Mapping, Quebec, Canada. 2011.

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Bernasconi N, Concha L, Kim H, Bernhardt BC. *Mapping diffusion abnormalities along white matter tracts in temporal lobe epilepsy.* American Epilepsy Society, Baltimore, MD. 2011.

Liu M, Chen Z, Concha L, Beaulieu C, Gross DW. *Disrupted anatomical white matter network in left mesial temporal lobe epilepsy.* American Epilepsy Society, Baltimore, MD. 2011.

Moreno B, Concha L, Gonzalez-Santos L, Ortiz J, Barrios F. *Intellect, apparent diffusion coefficient, and width of corpus callosum in healthy children.* Organization for Human Brain Mapping, Barcelona, Spain. 2010.

Bernhardt BC, Bernasconi N, Concha L, Bernasconi A. *Mri-based cortical thickness analysis in temporal lobe epilepsy: relationship to surgical outcome.* Organization for Human Brain Mapping, Barcelona, Spain. 2010.

Bernhardt BC, Bernasconi A, Concha L, Bernasconi N. *Trajectories of cortical pathology in temporal lobe epilepsy: A*

longitudinal mri study. Organization for Human Brain Mapping (OHBM), OHBM, Barcelona, Spain. 2010.

Vazquez P, Mercadillo R, Pasaye E, Bauer C, Concha L, Barrios F. *The concept pars sapiens correlated with cognitive paradigms in hypnosis: An fmri study.* Organization for Human Brain Mapping, Barcelona, Spain. 2010.

Liu M, Concha L, Beaulieu C, Gross DW. *Longitudinal mri of the limbic system in medically intractable temporal lobe epilepsy.* American Epilepsy Society, San Antonio, Texas. 2010.

Alexander R, Liu M, Concha L, Snyder T, Beaulieu C, Gros. *Studying correlations between white matter and neuropsychological profile in temporal lobe epilepsy using diffusion tensor imaging.* American Epilepsy Society, San Antonio, Texas. 2010.

Concha L, Kim H, Bernhardt BC, Bernasconi N. *Distance based analysis of dti tractography: Evidence for focal pathology in temporal lobe epilepsy.* American Epilepsy Society, Boston. 2009.

Concha L, Kim H, Bernhardt BC, Bernasconi N. *Spatial localization of diffusion abnormalities along dti tracts in temporal lobe epilepsy.* Diffusion models workshop, MICCAI, London, UK. 2009.

Concha L, Beaulieu C, Gross DW. *Microstructural characteristics of the fimbria/fornix in patients with temporal lobe epilepsy with and without mesial temporal sclerosis. Epilepsia*, vol. 49, p. 462–463. Annual Meeting of the American Epilepsy Society, Seattle. 2008.

Livy DJ, Concha L, Beaulieu C, Wheatley BM, Gross DW. *Fimbria axon field density in temporal lobe epilepsy.* Society for Neuroscience, Washington, D.C. 2008.

Gong G, He Y, Concha L, Lebel C, Gross DW, Evans AC, Beaulieu C. *Revealing the topological architecture of human cortical anatomical network by dti tractography. Proceedings of the XVI ISMRM*, p. 840. Scientific Meeting of the International Society for Magnetic Resonance in Medicine, Toronto, Ontario. 2008.

Concha L, Livy DJ, Gross DW, Wheatley BM, Beaulieu C. *Direct correlation between diffusion tensor imaging and electron microscopy of the fornix in humans with temporal lobe epilepsy. Proceedings of the XVI ISMRM*, p. 566. Scientific Meeting of the International Society for Magnetic Resonance in Medicine, Toronto, Canada. 2008.

Lebel C, Concha L, Gong G, Beaulieu C. *White matter tract probability atlas derived from diffusion tensor tractography of a large population. Proceedings of the XVI ISMRM*, p. 3313. International Society for Magnetic Resonance in Medicine, Toronto, Ontario. 2008.

Lebel M, Concha L, Beaulieu C, Wilman A. *Quantitative brain tissue mapping using fast spin-echo imaging. Proceedings of the XV ISMRM*, p. 2062. International Society for Magnetic Resonance in Medicine, Berlin, Germany. 2007.

Malykhin N, Concha L, Carter R, Yasmin U, Seres P, Beaulieu C, Coupland NJ. *Dti-tractography and reliability analysis for limbic and paralimbic white matter tracts.* Society of Biological Psychiatry, San Diego, California. 2007.

Tibbo P, Seres P, Purdon S, Concha L. *Diffusion tensor imaging of the fornix in unmedicated first episode schizophrenia.* Society of Biological Psychiatry, San Diego, California. 2007.

Concha L, Gross DW, Wheatley BM, Beaulieu C. *Diffusion tensor imaging demonstrates the evolution of axonal degeneration after corpus callosotomy. Proceedings of the XIV ISMRM*, p. 274. Scientific Meeting of the International Society for Magnetic Resonance in Medicine, Seattle, Washington. 2006.

Wiltshire K, Concha L, Bouchard T, Beaulieu C, Camicioli R. *Diffusion tensor imaging of the corpus callosum in patients with parkinson's disease: Correlation with executive function.* American Academy of Neurology, San Diego, California. 2006.

Wong J, Concha L, Beaulieu C, Kalra S. *Detection of upper motor neuron degeneration in amyotrophic lateral sclerosis by diffusion tensor imaging.* American Academy of Neurology, San Diego, California. 2006.

Knash M, Concha L, Gross DW, Beaulieu C, Wheatley BM. *Evaluation of the optic radiations following temporal lobe epilepsy surgery using diffusion tensor imaging. Epilepsia*, vol. 46, p. 41–42. Annual Meeting of the American Epilepsy Society, Washington, D.C. 2005.

Concha L, Beaulieu C, Wheatley BM, Gross DW. *Bilateral limbic diffusion abnormalities persist following temporal lobe surgery. Epilepsia*, vol. 46, p. 38–39. Annual Meeting of the American Epilepsy Society, Washington, D.C. 2005.

Concha L, Beaulieu C, Gross DW. *Evaluation of water diffusion in limbic white matter tracts in epilepsy patients without mesial temporal sclerosis. Epilepsia*, vol. 46, p. 172. International Epilepsy Congress, Paris, France. 2005.

Gross DW, Concha L, Beaulieu C. *Diffusion tensor white matter abnormalities in temporal lobe epilepsy with mesial temporal sclerosis. Epilepsia*, vol. 46, p. 332. International Epilepsy Congress, Paris, France. 2005.

Concha L, Gross DW, Beaulieu C. *Csf suppression in diffusion tensor tractography of the limbic system. Proceedings of the Workshop on Methods for Quantitative Diffusion MRI of Human Brain. ISMRM*. ISMRM Workshop on Methods for Quantitative Diffusion MRI of Human Brain, Lake Louise, Alberta, Canada. 2005.

Concha L, Beaulieu C, Gross DW. *Bilateral limbic abnormalities demonstrated with diffusion tensor imaging in patients with unilateral mesial temporal sclerosis. Epilepsia*, vol. 45, p. 109. Annual Meeting of the American Epilepsy Society, New Orleans. 2004.

Concha L, Gross DW, Beaulieu C. *Diffusion tensor imaging tractography using fluid-attenuated inversion recovery. Proceedings of the XI ISMRM*, p. 1194. International Society for Magnetic Resonance in Medicine, Kyoto, Japan. 2004.

Students

Graduated

PhD	Raúl Rodríguez Cruces. *Impacto cognitivo y anormalidades de la substancia blanca en pacientes con epilepsia del lóbulo temporal.*
PhD	Laura Verónica Cuaya Retana. *Correlatos neurales del reconocimiento de rostros en perros evaluados mediante resonancia magnética funcional.*
PhD	Guadalupe García Gomar. *Conectividad del núcleo subtalámico en pacientes con Enfermedad de Parkinson evaluada mediante imágenes sensibles a difusión.*
PhD	Alejandra Arafat Angulo Perkins. *Identificación de los factores cerebrales involucrados en la percepción de estímulos auditivos complejos.*
MSc	Luis Cuauhtémoc Márquez Bravo. *Seguimiento de los efectos de la lesión septo-hipocampal en un modelo de epilepsia crónica.*
MSc	Gilberto Rojas Vite *Evaluación de la microestructura de la substancia blanca en regiones de cruce de fibras.*
MSc	Gabriela Castillo López. *Relación de la integridad de la substancia blanca y concentración de alfa-sinucleína en biopsias de piel en pacientes con Enfermedad de Parkinson.*

MSc	Vicente Camacho Tellez. *Correlación entre perfiles neuropsicológicos y actividad cortical secundaria a la memoria de trabajo evaluada mediante imagen por resonancia magnética funcional en pacientes con epilepsia del lóbulo temporal.*
MSc	Itzamná Carlos Sánchez Moncada. *Bases neurales del aprendizaje y generalización de la percepción del paso del tiempo.*
MSc	José Rafael Moreno Salazar. *Correlación de déficits cognitivos con el grosor cortical en pacientes con epilepsia del lóbulo temporal*
MSc	Erik López Carrera. *Evaluación del grosor cortical de la corteza auditiva en músicos: cambios plásticos por especialización.*
MSc	Luis Octavio Jiménez Valverde. *Caracterización del deterioro en la memoria de trabajo en pacientes con epilepsia del lóbulo temporal mediante resonancia magnética funcional.*
MSc	Circe Amanda Wilke Quiterio. *Modulación de la actividad del planum polare mediante manipulaciones temporales de estímulos auditivos.*
MSc	Laura Verónica Cuaya Retana. *Correlatos neurales de la emisión de juicios.*
MSc	Sergio Sánchez Moguel. *Estandarización de la prueba Stroop Numérico en el resonador magnético en personas entre 23 y 28 años de edad.*
MSc	María Barrera Esparza. *Optimización de protocolos de adquisición de imágenes del tensor de difusión.*
Social Service	Guadalupe García Gomar. *Caracterización de la conectividad del núcleo subtalámico mediante tractografía.*
Bachelor	Canek Llera.
Current	
PhD	Ana Aquiles. *Caracterización anatómica y funcional de las displasias corticales en un modelo roedor.*
PhD	Ricardo Ríos Carrillo. *Evaluación de la micro-arquitectura de la substancia blanca mediante imágenes sensibles a difusión con gradientes oscilantes.*
PhD	Penélope Martínez Campo. *Análisis de la conectividad cerebral que subyace la integración audio-motora inducida por sonidos con estructura temporal.*
PhD	Pamela García Saldívar (Co-tutor). *Reorganización del circuito del área motora suplementaria - ganglios basales inducidos por*

el aprendizaje de una tarea de ejecución rítmica de movimientos en el primate.

MSc — David Cortés Servín. *Análisis de la arquitectura cortical mediante imágenes sensibles a difusión.*

MSc — Alejandra Garay Cortés (Co-tutor). *Modulación de la vía septohipocampal en un modelo de epilepsia del lóbulo temporal.*

MSc — Ana Elena Rosas Carrera. *Deterioro cognitivo y su asociación con anormalidades del fórnix en pacientes con epilepsia del lóbulo temporal.*

Post-doctoral researchers

Ricardo Coronado Leija. *Modelos avanzados de difusión para la detección de anormalidades de la substancia blanca en cruces de fibras.*

Academic exchange

PhD — Hebel Urquía. Universidad de Campinas, Brasil. 5 months.

PhD — Marcos L. Aranda. Facultad de Medicina, Universidad de Buenos Aires, Argentina. 6 months.

PhD — Renata Barbosa. Universidad de Campinas, Brasil. 8 months.

PhD — Sandra Niño. Universidad Autónoma de San Luis Potosí. 3 months.

Courses and Meetings

Annual Meeting. American Epilepsy Society. New Orleans, EEUU. Diciembre, 2018.

Annual Meeting of the International Society for Magnetic Resonance in Medicine. Honolulu, Hawaii. May, 2017

Annual Meeting. American Epilepsy Society. Houston, TX. December, 2016.

Annual Meeting of the American Epilepsy Society. Houston, TX. December, 2016

20^{th} Annual Meeting of the Organization for Human Brain Mapping (HBM). Hamburgo, Germany. June, 2014.

ISMRM Diffusion Workshop: Diffusion as a probe of neural tissue microstructure. Podstrana, Croatia, October 2013.

Symposium on the Neurophysiology of Interval Timing. Instituto de Neurobiología, Querétaro. January, 2012.

19^{th} Scientific Meeting. International Society for Magnetic Resonance in Medicine. Montreal, Québec. May, 2011.

16^{th} Annual Meeting of the Organization for Human Brain Mapping (HBM). Barcelona, Spain. June, 2010.

12^{th} International Conference on Medical Image Computing and Computer Assisted Intervention, MICCAI. Imperial College London, UK. September, 2009.

16^{th} Scientific Meeting. International Society for Magnetic Resonance in Medicine. Toronto, Ontario. May, 2008.

14^{th} Scientific Meeting. International Society for Magnetic Resonance in Medicine. Seattle, Washington. May, 2006.

60^{th} Annual Meeting. American Epilepsy Society. San Diego, CA. December, 2006.

The National EpiFellows Foundation 14^{th} Annual Scientific Forum. San Diego, CA. December, 2006.

13^{th} Scientific Meeting. International Society for Magnetic Resonance in Medicine. Miami, Florida. May, 2005.

Workshop on Methods for Quantitative Diffusion MRI of Human Brain. International Society of Magnetic Resonance in Medicine. Lake Louise, Alberta, Canada. March 13-16, 2005.

59^{th} Annual Meeting. American Epilepsy Society. Washington, DC. December, 2005.

The National EpiFellows Foundation 13^{th} Annual Scientific Forum. Washington, DC. December, 2005.

58^{th} Annual Meeting. American Epilepsy Society. New Orleans. December, 2004.

The National EpiFellows Foundation 12^{th} Annual Scientific Forum. New Orleans, December 3rd, 2004.

12^{th} Scientific Meeting. International Society for Magnetic Resonance in Medicine. Kyoto, Japan. May, 2004.

11^{th} Scientific Meeting. International Society for Magnetic Resonance in Medicine. Toronto, Canada. June, 2003.

Memberships

2016-	American Epilepsy Society
2010-	National Research System, Mexico. Level II.
2006-2013	International Society for Magnetic Resonance in Medicine.
2010-	Organization for Human Brain Mapping

Languages

Spanish

English (bilingual)

Research awards

2019 *National Laboratory for Magnetic Resonance Imaging: Consolidation. Principal Investigator*
CONACyT, Mexico.
USD$150,000.

2018 *National Laboratory for Magnetic Resonance Imaging: Consolidation. Principal Investigator*
CONACyT, Mexico.
USD$175,000.

2017 *Assessment of axonal abnormalities in regions of crossing fibers through diffusion-weighted MRI*
Fronteras de la Ciencia; CONACyT, Mexico.
USD$100,000.

2017 *National Laboratory for Magnetic Resonance Imaging: Consolidation. Principal Investigator*
CONACyT, Mexico.
USD$200,000.

2016 *Histological correlation of water diffusion profiles of degenerated white matter in regions of crossing fibres*
PAPIIT, DGAPA, UNAM , Mexico.
USD$75,000.

2015 *National Laboratory for Magnetic Resonance Imaging: Consolidation. Principal Investigator*
CONACyT, Mexico.
USD$1,300,000.

2014 *Establishment of the National Laboratory for Magnetic Resonance Imaging. Principal Investigator*
CONACyT, Mexico.
USD$1,000,000.

2012 *Prospective evaluation of white matter damage in patients with temporal lobe epilepsy.*
CONACyT, Mexico. SALUD-2012-01-181508.
USD$90,000.

2012 *Cognitive impariment in patients with temporal lobe epilepsy: Association with white matter damage.*
PAPIIT-DGAPA, Universidad Nacional Autónoma de México.
IB201712.

USD$11,500, renewable.

2011 *Anatomo-functional characterization of the auditory cortex and its specialization in speakers of a tonal language.*
PAPIIT-DGAPA, Universidad Nacional Autonoma de Mexico.
IA202811-11.
USD$10,000.

2010 *Identification of brain regions involved in the perception of complex acoustic stimuli.*
CONACyT, Mexico. IE252-120295.
USD$10,000.

Awards and recognitions

2017 Recognition for Young Investigator in the area of Natural Sciences.
Universidad Nacional Autónoma de México.

2016 DGAPA-PRIDE D (Highest level).
Universidad Nacional Autónoma de México.

2015 Young Researcher Award. Premio Alejandrina.
Universidad Autónoma de Querétaro, Mexico.

2015 Top-ten most-cited researchers in the field of Bio-Medicine.
Universidad Autonoma de México

2007-2009 Van Gelder-Savoy research award

2007 Andrew Stewart Memorial Award
Faculty of Graduate Studies and Research
University of Alberta
Excellence in Graduate Research

2007 MedStar Award
Faculty of Medicine and Dentistry
University of Alberta Best peer-reviewed article published within the last 12 months.

2003-2007 Promep Scholarship
Secretary of Public Education, Mexico.

2001 Graduated *Summa Cum Laude*

Professional experience

2000-2001 Rotatory internship
Hospital Central “Dr. Ignacio Morones Prieto”
San Luis Potosí, Mexico.

2001-2002 Rural Community service
Santo Domingo Health Centre

San Luis Potosí, Mexico.

Teaching

2013-	Course: Scientific communication. Institute of Neurobiology.
2010-	Course: Principles of Magnetic Resonance Imaging.
2011-	Coordinator of Course: Neurobiology III. Institute of Neurobiology.
2014	Latin American Training Program (LATP), Society for Neuroscience. Institute of Neurobiology, August, 2014.
2015	Coordinator: Latin American Training Program (LATP), Society for Neuroscience. Institute of Neurobiology, August, 2015.

Computing skills

Matlab, Bash, git, LaTeX.

Digital image processing.

Linux networks and parallel computing (SGE).

References upon request
Querétaro, México. June 15, 2020.