

**TENURE CURRICULUM VITAE
OF
JORGE RIERA DIAZ
DEPT BIOMEDICAL ENGINEERING**

EDUCATION

Degree	Institution	Field	Dates
PhD	University of Havana (CNRS fellow, Paris)	Physics	June 1999
MSc	ICTP (Italy)	Biophysics	May 1995
BSc	University of Havana	Physics	June 1988

FULL-TIME ACADEMIC EXPERIENCE

Institution	Rank	Field	Dates (Month & Year)
Tohoku University School of Medicine	Assoc Prof	Biomed Eng.	June 2006 – April 2012
Tohoku University School of Engineering	Assist Prof	Biomed Eng.	Sept 2004 – May 2006
Tohoku University School of Engineering	PostDoc	Biomed Eng.	Sept 2002 – Aug 2004
RIKEN Brain Science Institute	PostDoc	Physics	Mar 2000 – Dec 2000

PART-TIME ACADEMIC EXPERIENCE (list most recent first)

Institution	Rank	Field	Dates (Month & Year)
N/A			

NON-ACADEMIC EXPERIENCE

Place of Employment	Title	Dates
N/A		

EMPLOYMENT RECORD AT FIU

Rank	Dates
Faculty Fellow: The Honor College	Sept 2016 – Present
STEM Transformation Institute's Founding Faculty Fellows	Jan 2015 – Present
Secondary Appointment - Associate Prof. (Department of Immunology)	Nov 2013 – Present
Associate Prof. (Department of Biomed Engineering)	June 2012 – Present
Visiting Prof. (Department of Biomed Engineering)	Sept 2011 – May 2012

PUBLICATIONS IN DISCIPLINE

Books (give full bibliographical references)

N/A

Articles (Note: Students and Postdoc Fellows in my lab)

Impact Factors (**IF**) taken from <http://www.scijournal.org/index.html>

1. Bruyns-Haylett M, Luo J, Kennerley AJ, Harris S, Boorman L, Milne E, Vautrelle N, Hayashi Y, Whalley BJ, Jones M, Berwick J, **Riera J**, Zheng Y. The neurogenesis of P1 and N1: A concurrent EEG/LFP study. *NeuroImage* 146, 575-588, 2017. **IF**: 5.835
2. Song Y, Garcia S, Frometa Y, Ramella-Roman JC, Soltani M, Almadi M, **Riera J**, Lin W-C. Quantitative assessment of hemodynamic and structural characteristics of in vivo brain tissue using total diffuse reflectance spectrum measured in a non-contact fashion. *Biomedical Optics Express* 8(1), 78-103, 2017. **IF**: 3.337
3. Valdes-Hernandez PA, Bae J, Song Y, Sumiyoshi A, Aubert-Vazquez E, **Riera J**. Validating Non-invasive EEG source imaging using optimal electrode configurations on a representative rat head model. *Brain Topography* 29, 1-26, DOI 10.1007/s10548-016-0484-4, 2016. (*Corresponding author*). **IF**: 3.394

4. Song Y, Torres RA, Garcia S, Frometa Y, Bae J, Deshmukh A, Lin W-C, Zheng Y, **Riera J**. Dysfunction of neurovascular/metabolic coupling in chronic focal epilepsy. *IEEE Trans. Biomed. Eng.* 63(1), 97-110, 2016. (*Corresponding author*). **IF: 3.577**
5. Song Y, **Riera J**, Bhatia S, Ragheb J, Garcia C, Weil AG, Jayakar P, Lin W-C. Intraoperative optical mapping of epileptogenic cortices during non-ictal periods in pediatric patients. *NeuroImage: Clinical* 11, 423-434, 2016. **IF: 4.348**
6. Saito A, Mekawy MM, Sumiyoshi A, **Riera J**, Shimizu H, Kawashima R, Tominaga T. Noninvasive targeting delivery and in vivo magnetic resonance tracking method for live apoptotic cells in cerebral ischemia with functional Fe₂O₃ magnetic nanoparticles. *J Nanobiotechnol* 14(19), 1-11, 2016. **IF: 4.946**
7. Song Y, Sanganahalli BG, Hyder F, Lin WC, **Riera J**. Distributions of irritative zones are related to individual alterations of resting-state networks in focal epilepsy. *PLoS ONE* 10(7): e0134352. doi:10.1371/journal.pone.0134352, 2015. **IF: 2.806**
8. Bae J, Deshmukh A, Song Y, **Riera J**. Brain source imaging in rats with preclinical models of focal epilepsy using high-resolution EEG recordings. *J Vis Exp* (100), e52700, doi:10.3791/52700, 2015. (*Corresponding author*). **IF: 1.24**
9. **Riera J**, Goto T, Kawashima R. An electrophysiological microscope for fast assessments to the activity of cortical networks in vivo: from population inputs to single unit outputs. *Frontiers in Neural Circuits* 8(4), 1-14, 2014. **IF: 3.005**
10. **Riera J**, Cabo A. Instantaneous charge unbalance in the brain: a result from procedural errors or an authentic physical phenomenon? *Journal of Neurophysiology* 109, 1684-1685, 2013. **IF: 2.396**
11. Wang K, **Riera J**, Enjieu Kadji H, Goto T, Kawashima R. The role of the extracellular impedance profiles in the compartmental models for neurons: a unified formalism for recording and stimulation. *Neural Computation* 25, 1807-1852, 2013. (*Corresponding author*). **IF: 1.938**
12. Aizawa-Kohama M, Endo T, Kitada M, Wakao S, Sumiyoshi A, Matsuse D, Kuroda Y, **Riera J**, Kawashima R, Tominaga T, Dezawa M. Transplantation of bone marrow-derived neural precursor cells ameliorates deficits in a rat model of complete spinal cord transection. *Cell Transplantation* 22(9), 1613-1625, 2013. **IF: 3.006**
13. **Riera J**, Ogawa T, Goto T, Sumiyoshi A, Nonaka H, Evans A, Miyakawa H, Kawashima R. Pitfalls in the dipolar model for the neocortical EEG sources. *Journal of Neurophysiology* 108(4), 956-975, 2012. **IF: 2.396**
14. Sumiyoshi A, Suzuki H, Ogawa T, **Riera J**, Shimokawa H, Kawashima R. Coupling between gamma oscillation and fMRI signal in rat somatosensory cortex: its dependence on systemic physiological parameters. *NeuroImage* 60(1), 738-746, 2012. **IF: 5.835**
15. **Riera J**, Hatanaka R, Ozaki T, Kawashima R. Modeling the spontaneous Ca²⁺ oscillations in astrocytes: Inconsistencies and usefulness. *Journal of Integrative Neuroscience* 10: 439-473, 2011. **IF: 0.647**
16. Valdés-Hernández PA, Sumiyoshi A, Nonaka H, Haga R, Aubert-Vásquez E, Iturria-Medina Y, **Riera J**, Kawashima R. An in vivo MRI template set for morphometry, tissue segmentation and fMRI localization in rats. *Frontiers in Neuroscience (Neuroinformatics)* 5, Article 26, 1-19, 2011. (*Corresponding author*). **IF: 3.870**
17. Ogawa T, **Riera J**, Goto T, Sumiyoshi A, Nonaka H, Jerbi K, Bertrand O, Kawashima R. Large-scale heterogeneous representation of sound attributes in rat primary auditory cortex: from unit activity to population dynamics. *The Journal of Neuroscience* 31(41), 14639-14653, 2011. (*Corresponding author and designed research*). **IF: 5.988**
18. **Riera J**, Hatanaka R, Uchida T, Ozaki T, Kawashima R. Quantifying the uncertainty of spontaneous Ca²⁺ oscillations in astrocytes: Particulars of Alzheimer's disease. *Biophysical Journal* 101(3), 554-564, 2011. **IF: 3.656**

19. Crivaro M, Enjieu-Kadji H, Hatanaka R, Nakauchi S, Bosch J, Judin J, **Riera J**, Kawashima R. Multi-photon fluorescent images with a spatially varying background signal: A ML deconvolution method. *Journal of Microscopy* 242(3), 311-324, 2011. (*Corresponding author*). **IF:** 1.692
20. Sumiyoshi A, **Riera J**, Ogawa T, Kawashima R. A Mini-Cap for simultaneous EEG and fMRI recording in rodents. *NeuroImage* 54, 1951-1965, 2011. (*Corresponding author*). **IF:** 5.835
21. **Riera J**, Valdes-Sosa P. Mesoscale in neuroimaging: creating bridges between the microscopic and system levels. *Journal of Integrative Neuroscience* 9(4), v-vii, 2010. **IF:** 0.647
22. Bosch J, **Riera J**, Biscay R, Wong KFK, Galka A, Yamashita O, Sadato N, Kawashima R, Aubert E, Rodriguez R, Valdes P, Miwakeichi F, Ozaki T. Spatio-temporal correlations from fMRI time series based on the NN-ARx model. *Journal of Integrative Neuroscience* 9(4), 381-406, 2010. (*Corresponding author*). **IF:** 0.647
23. Goto T, Hatanaka R, Ogawa T, Sumiyoshi A, **Riera J**, Kawashima R. An evaluation of the conductivity profile in the barrel cortex of Wistar rats. *Journal of Neurophysiology* 104, 3388-3412, 2010. (*Corresponding author*). **IF:** 2.396
24. **Riera J**, Sumiyoshi A. Brain oscillations: Ideal scenery to understand the neurovascular coupling. *Current Opinion in Neurology* 23(4), 374-381, 2010. **IF:** 4.699
25. **Riera J**, Ogawa T, Hatanaka R, Goto T, Sumiyoshi A, Enjieu Kadji H, Nakauchi S, Kawashima R. Concurrent observations of astrocytic Ca^{2+} activity and multisite extracellular potentials from an intact cerebral cortex. *J. Biophotonics* 3(3), 147-160, 2010. **IF:** 4.328
26. Homma N, Kato S, Goto T, Sakai M, Sugita N, Yoshizawa M, Yomogida Y, Sassa Y, Sugiura M, **Riera J**, Kawashima R. Human brain activities related to manual control of nonholonomic systems: An fMRI study. *IJACE International Journal of Advanced Computed Engineering* 2(2), 129-133, 2009. **IF:** Under Comp
27. Yokoyama S, Kim J, Uchida S, Miyamoto T, Yoshimoto K, **Riera J**, Yusa N, Kawashima R. Left middle temporal deactivation caused by insufficient second language word comprehension by Chinese-Japanese bilinguals. *Journal of Neurolinguistics* 22, 476-485, 2009. **IF:** 1.403
28. Stephan KE, **Riera J**, Deco G, Horwitz B. The brain connectivity workshops: Moving the frontiers of computational systems neuroscience. *NeuroImage* 42, 1-9, 2008. **IF:** 5.835
29. **Riera J**, Schousboe A, Waagepetersen HS, Howarth C, Hyder F. The micro-architecture of the cerebral cortex: Functional neuroimaging models and metabolism. *NeuroImage* 40, 1436-1459, 2008. **IF:** 5.835
30. Wan X, Sekiguchi A, Yokoyama S, **Riera J**, Kawashima R. Electromagnetic source imaging: Backus-Gilbert resolution spread function-constrained and functional MRI-guided spatial filtering. *Human Brain Mapping* 29, 627-643, 2008. **IF:** 4.53
31. **Riera J**, Jimenez JC, Wan X, Kawashima R, Ozaki T. Nonlinear local electro-vascular coupling. Part II: From data to neural masses. *Human Brain Mapping* 28, 335-354, 2007. **IF:** 4.53
32. Sakai Y, Iwata K, **Riera J**, Wan X, Yokoyama S, Shimoda Y, Kawashima R, Yoshimoto K, Koizumi M. An ERP study of the integration process between a noun and a numeral classifier: Semantic or syntactic? *Cognitive Studies: Bulletin of the Japanese Cognitive Science Society* 13(3), 443-454, 2006. **IF:** Under Comp
33. Yokoyama S, Miyamoto T, **Riera J**, Kim J, Akitsuki Y, Iwata K, Yoshimoto K, Horie K, Sato S, Kawashima R. Cortical mechanisms involved in the processing of verbs: An fMRI study. *Journal of Cognitive Neuroscience* 18(8), 1304-1313, 2006. **IF:** 3.108
34. Poznanski R, **Riera J**. fMRI Models of Dendritic and astrocytic networks. *J. Integrative Neuroscience* 5(2), 273-326, 2006. **IF:** 0.647
35. Wan X, **Riera J**, Iwata K, Takahashi M, Wakabayashi T, Kawashima R. The neural basis of the hemodynamic response nonlinearity in human primary visual cortex: Implications for neurovascular coupling mechanism. *NeuroImage* 32, 616-625, 2006. **IF:** 5.835

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37. **Riera J**, Wan X, Jimenez JC, Kawashima R. Nonlinear local electro-vascular coupling. Part I: A theoretical model. *Human Brain Mapping* 27, 896-914, 2006. **IF:** 4.53
38. Wan X, Iwata K, **Riera J**, Ozaki T, Kitamura M, Kawashima R. Artifact reduction for EEG/fMRI recordings: Nonlinear reduction of ballistocardiogram artifacts. *Clinical Neurophysiology* 117, 668-680, 2006. **IF:** 3.866
39. Wan X, Iwata K, **Riera J**, Kitamura M, Kawashima R. Artifact reduction for EEG/fMRI recordings: Adaptive FIR reduction of imaging artifact. *Clinical Neurophysiology* 117, 681-692, 2006. **IF:** 3.866
40. Miura N, Watanabe J, Iwata K, Sassa Y, **Riera J**, Tsuchiya H, Sato S, Horie K, Takahashi M, Kitamura M, Kawashima R. Cortical Activation during reading of ancient versus modern Japanese texts: fMRI study. *NeuroImage* 26(2), 426-431, 2005. **IF:** 5.835
41. **Riera J**, Aubert E, Iwata K, Kawashima R, Wan X, Ozaki T. Fusing EEG and fMRI based on a bottom-up model: Inferring activation and effective connectivity in neural masses. *Phil. Trans. R. Soc. Lond. B.* 360(1457), 1025-1041, 2005. **IF:** 5.846
42. **Riera J**, Bosch J, Yamashita O, Kawashima R, Sadato N, Okada T, Ozaki T. fMRI activation maps based on the NN-ARx model. *NeuroImage* 23(2), 680-697, 2004. **IF:** 5.835
43. **Riera J**, Watanabe J, Kazuki I, Naoki M, Aubert E, Ozaki T, Kawashima R. A state-space model of the hemodynamic approach: Non-linear filtering of BOLD signals. *NeuroImage* 21(2), 547-567, 2004. **IF:** 5.835
44. Miura N, Iwata K, Watanabe J, Sugiura M, Akitsuki Y, Sassa Y, Ikuta N, Okamoto H, Watanabe Y, **Riera J**, Maeda Y, Matsue Y, Kawashima R. Cortical activation during reading aloud of long sentences: an fMRI study. *Neuroreport* 14(12), 1563-1566, 2003. **IF:** 1.395
45. Torres R, Galan L, Biscay L, **Riera J**. Probabilistic model for category production. *Revista CENIC. Ciencias Biológicas* 33(3), 133-140, 2002. **IF:** Under Comp
46. Bosch Bayard J, Valdes Sosa P, Virues Alba T, Aubert Vazquez E, Roy John E, Harmony Baillet T, **Riera J**, Trujillo Barreto N. 3D statistical parametric mapping of EEG source spectra by means of variable resolution electromagnetic tomography (VARETA). *Clinical Electroencephalography* 32(2), 47-61, 2001. **IF:** 2.163 – Currently: *Clinical EEG and Neuroscience*
47. Baillet S, **Riera J**, Mangin JF, Garnero L, Aubert E. Evaluation of inverse methods and head models for EEG source localization using a human skull phantom. *Physics Medicine & Biology* 46(1), 77-96, 2001. **IF:** 2.742
48. Valdés P, Jiménez JC, **Riera J**, Biscay R, Ozaki T. Nonlinear EEG analysis based on a neural mass model. *Biological Cybernetics* 81(5/6): 415-424, 1999. **IF:** 1.716
49. **Riera J**, Fuentes ME, Valdés P, Ohárriz Y. EEG distributed inverse solutions for a spherical head model. *Inverse Problems* 14(4), 1009-1019, 1998. **IF:** 1.033
50. Mueller M, Picton T, Valdés P, **Riera J**, Teder-Salejarvi WA, Hillyard S. Effects of spatial selective attention on the steady-state visual evoked potentials in the 20-28 Hz range. *Cognitive Brain Research* 6, 249-261, 1998. **IF:** 2.746 – Currently: *Brain Research*
51. Moulden DJA, Picton TW, Meiran N, Stuss DT, **Riera J**, Valdes-Sosa P. W-19. Event-related potentials when switching attention between task-sets. *Brain and Cognition* 37(1), 186-190, 1998. **IF:** 2.432
52. Jiménez JC, Valdés P, Rodríguez LM, **Riera J**, Biscay R. Computing the noise covariance matrix of the local linearization scheme for the numerical solution of stochastic differential equations. *Appl. Math. Lett.* 11(1), 19-23, 1998. **IF:** 2.233
53. **Riera J**, Fuentes ME. Electric lead field for a piece-wise homogeneous volume conductor model

- of the head. *IEEE Trans. Biomed. Eng.* 45(6), 746-753, 1998. **IF:** 3.577
54. **Riera J**, Valdés P, Fuentes ME, Ohárriz Y. Explicit Backus and Gilbert EEG inverse solution for spherical symmetry. *Biomedizinische Technik, Band 42, Ergänzungsband 1*, 216-218, 1997. **IF:** Under Comp
 55. **Riera J**, Fuentes ME, Valdés P, Ohárriz Y. Theoretical basis of the EEG spline inverse solutions for a spherical head model. *Biomedizinische Technik, Band 42, Ergänzungsband 1*, 219-222, 1997. **IF:** Under Comp
 56. **Riera J**, Fuentes ME, Aubert E, Díaz D. Solving the forward problem: Spherical vs. realistic electric lead field. *Biomedizinische Technik, Band 42, Ergänzungsband 1*, 223-226, 1997. **IF:** Under Comp
 57. Biscay R, Jiménez JC, **Riera J**, Valdés P. Local linearization method for numerical solution of stochastic differential equations. *Ann. Inst. Statist. Math.* 48(4), 631-644, 1996. **IF:** 1.049
 58. Harmony T, Fernández-Bouzas A, Marosi E, Fernández T, Valdés P, Bosch J, **Riera J**, Bernal J, Rodríguez M, Reyes A, Silva J, Alonso M, Sánchez-Cabrera JM. Frequency source analysis in patients with brain lesions. *Brain Topography* 8(2), 109-117, 1995. **IF:** 3.394
 59. **Riera J**, Carballo JA, Biscay R, Valdés P. The estimation of event related potentials affected by random shifts and scalings. *Int. J. Biomed. Comput.* 38,109-120, 1995. **IF:** 3.21. – Currently: *International Journal Medical Informatics*
 60. Carballo JA, **Riera J**, Biscay R, Valdés P. Model parameters estimation when the evoked potential recordings are affected by a random scale factor. *Int. J. Biomed. Comput.* 30, 71-87, 1992. **IF:** 3.21 – Currently: *International Journal Medical Informatics*
 61. Valdés P, Bosch J, Grave R, Hernández J, **Riera J**, Pascual R, Biscay R. Frequency domain models of the EEG. *Brain Topography* 4(4), 309-319, 1992. **IF:** 3.394
 62. **Riera J**, Hernández JL. Quantitative analysis of the propagation of the nervous impulse by the fiber. *Revista CENIC Ciencias Biológicas* 19, 1-3, 1988. **IF:** Under Comp

Proceedings (Note: Students and Postdoc Fellows in my lab)

1. Estumano DC, Orlande HRB, Colaço MJ, Ritto TG, **Riera J**, Dulikravich GS. Bayesian Estimation of Parameters in Hodgkin-Huxley's Model of Biomedical Electric Signals. *Int. Symp. Uncertainty Quantification and Stochastic Modeling 2nd*: 1-12, 2014.
2. Goto T, Ogawa T, **Riera J**, Kawashima R. Localization of single barrel column by means of a volumetric current source density analysis in the somatosensory cortex of rat. *Neuroscience Research* 71: e304–e305, 2011.
3. **Riera J**, Ogawa T, Goto T, Sumiyoshi A, Nonaka H, Evans A, Kawashima R. Pitfalls in the Dipolar Model of the Neocortical EEG Sources. *Proceedings of the Second APSIPA Annual Summit and Conference*: 964-968, 2010.
4. Nakauchi S, **Riera J**, Kawashima R, Miyakawa Y. Alpha2 Nicotonic Acetylcholine Receptor and LPT Induction in the Hippocampal CA1 Region. *Journal Physiological Society Japan* 72(3), 2010.
5. Enjieu-Kadji HG, Nakauchi S, Goto T, Sahara Y, Kawashima R, **Riera J**. A methodology to characterize the layer 5 non-adapting RS neocortical PCs. *Neuroscience Research* 65(1): S226, 2009.
6. Bosch Bayard J, **Riera J**, Biscay Lirio R, Wong K, Yamashita O, Valdés Sosa PA, Ozaki T. Spatio-Temporal Correlations in fMRI Time Series: The Innovation Approach. *Clinical Neurophysiology* 119(9): e137-e138, 2008.
7. Ogawa T, Goto T, Jiménez JC, Ozaki T, Kawashima R, **Riera JJ**. Estimation of event related signatures from single trial LFPs. *Frontiers in Human Neuroscience* -01/2008. DOI:10.3389/conf.neuro.09.2009.01.367
8. **Riera J**, Goto T, Enjieu-Kadji H, Ogawa T, Morito R, Kawashima R. The Micro-Architecture of the Cerebral Cortex: Its Impact on Functional Neuroimaging in Humans. *Clinical Neurophysiology*

- 119(9): e107, 2008.
9. Kato S, Goto T, Homma N, Yoshizawa M, Yomogida Y, Sassa Y, Sugiura M, **Riera J**, Kawashima R. fMRI Analysis of the Human Brain Activities During Manual Control of a Nonholonomic System. Proceedings of the SICE Annual Conference, Article number 4654986: 1977-1980, 2008.
 10. **Riera J**, Jimenez JC, Ozaki T, Kawashima R, Wan X. Nonlinear Local Neurovascular Coupling in the Cerebral Cortex. Neuroscience Research 58, Suppl. 1: S129, 2007.
 11. **Riera J**, Kawashima R. P31.5 Concurrent EEG correlates of event-related and spontaneous fMRI: Implications for neural basis of functional imaging. Clinical Neurophysiology 117: 150, 2006.
 12. Wan X, **Riera J**, Kawashima R. Concurrent EEG correlates of event-related and spontaneous fMRI: Implications for neural basis of functional imaging. Clinical Neurophysiology 117: S121-S336, 2006.
 13. Wan X, Iwata K, **Riera J**, Kawashima R, Kitamura M. Step for Fusion of Electroencephalogram and Functional Magnetic Resonance Imaging: F131. J. Clinical Neurophysiology 22(5): 363, 2005.
 14. **Riera J**, Valdes P, Aubert E, Evans A, Worley K. An Analysis of Brain Sources and Connectivity Patterns Associated with Alpha Rhythm Reactivation in Human. NeuroImage 13(6), Suppl. 1, Part 2: 233, 2001.
 15. Díaz D, Martínez JM, **Riera J**. Electric Field Induced Inside a Sphere due to Radial Single Coil Magnetic Stimulation. NeuroImage 7(4): S633, 1998.
 16. Valdés P, Picton T, Trujillo N, Bosch J, Aubert E, **Riera J**, Biscay R, Carbonell F, Barroso E, Fernández A, Evans A. Constraining EEG-MEG Source Imaging with Statistical Neuroanatomy. NeuroImage 7(4): S635, 1998.
 17. Harmony T, Fernández-Bouzas A, Aubert E, Valdés P, Casanova R, Silva J, Fernández T, García F, **Riera J**, Martínez M, Barrios F, Rojas R, Quiroz O. Volumetric Anatomically Restricted Distributed Inverse Solution of Auditory and Visual N1 Components. NeuroImage 5(4), Part II: S432, 1997.
 18. Lins OG, Picton TW, Choi V, Valdez-Sosa P, **Riera J**, Casanova R. From Sensors to Sources. NeuroImage 3(1), Suppl. 1: S161, 1996.
 19. Lins OG, Picton TW, Choi V, Valdez-Sosa P, **Riera J**, Casanova R. Scalp-recorded electrical fields: from sensors to sources. International Journal of Psychophysiology 25(1): 61-62, 1996.
 20. Muller MM, Valdes-Sosa M, Bosch J, **Riera J**, Bobes MA. Eliciting Induced Gamma Band Responses with the Movement of a Coherent Stimulus in Humans. Psychophysiology 31, Suppl. 1: 69-70, 1994.
 21. **Riera J**, Carballo J, Biscay R, Valdés P. ERP Components Estimation. International Journal of Psychophysiology. 11(1): 69, 1991.
 22. Morena L, Torres R, Chivas F, **Riera J**, Lara I, Biscay R, Galan L, Santaya M, Castellanos B. Natural Categories During Ontogeny: Relevance for the Structure of Semantic Memory. Int. J. Neuroscience 49: 221-302, 1989.

Chapters in Books (Note: Students and Postdoc Fellows in my lab)

1. **Riera Jorge**. Brain Imaging: Overview In: Encyclopedia of Computational Neuroscience. Springer (Eds. Dieter Jaeger, Ranu Jung): 1-3, 2014.
2. **Riera Jorge**. Biophysical Models: Neurovascular Coupling, Cortical Microcircuits, and Metabolism In: Encyclopedia of Computational Neuroscience. Springer (Eds. Dieter Jaeger, Ranu Jung): 1-15, 2014.
3. **Riera Jorge**. What can be observed from functional neuroimaging? In: Complex Medical Engineering. (Eds: JL Wu, K Ito, S Tobimatsu, T Nishida, H Fukuyama). Springer: 313-333, 2007.
4. 岩田一樹, ホルヘ・リエラ, 川島隆太. 脳高次機能イメージングとその将来 脳の形態と機能 (福田寛編). 新興医学出版社 29-39, 2005.

5. Casanova R, Valdés P, Garcia F, Aubert E, **Riera J**, Korin W, Lins O. Frequency Domain Distributed Inverse Solutions. In: *Advances in Biomagnetism Research*, Aine, C., Okada, Y., Stroink, G., Swithenby, S., and Wood, C. (Eds.), Springer-Verlag, New York, Vol. I: 189-191, 2000.
6. Valdés P, **Riera J**, Casanova R. Spatio Temporal Distributed Inverse Solutions. In: *Advances in Biomagnetism Research*, Aine, C., Okada, Y., Stroink, G., Swithenby, S., and Wood, C. (Eds.), Springer-Verlag, New York, Vol. I: 377-380, 2000.
7. **Riera J**, Aubert E, Valdés P, Casanova R, Lins O. Discrete Spline Electric-Magnetic Tomography (DSPET) based on Realistic Neuroanatomy. In: *Advances in Biomagnetism Research*, Aine, C., Okada, Y., Stroink, G., Swithenby, S., and Wood, C. (Eds.), Springer-Verlag, New York, Vol. I: 326-329, 2000.

Government Reports or Monographs (Note: Students and Postdoc Fellows in my lab)

1. Cabo A, **Riera J**, *Valdes-Hernandez PA*. About the effects of diffusion in electric tomography. arXiv:1610.07642v1 [physics.bio-ph], 2016.
2. Cabo A, **Riera J**. How the active and diffusional nature of brain tissues can generate monopole signals at micrometer sized measures. Cornell University Library, arXiv:1410.0274, 2014.
3. Pascual-Marqui RD, Biscay RJ, Valdes-Sosa PA, Bosch-Bayard J, **Riera-Diaz J**. Cortical current source connectivity by means of partial coherence fields. Cornell University Library, arXiv:1108.0251, 2011.
4. Bosch-Bayard J, **Riera J**, Biscay-Lirio RJ, Wong KFK, Yamashita O, Galka A, Sadato N, Kawashima R, Valdes-Sosa P, Miwakechi F, Ozaki T. Spatio-Temporal Correlations in fMRI Time Series: the Whitening Approach. ISM Research Memorandum, No. 1025, The Institute of Statistical Mathematics, Tokyo, Japan, 2007.
5. Wan X, Iwata K, **Riera J**, Kitamura M, Ozaki T, Kawashima R. Artifacts Reduction for EEG/fMRI Recordings. Part 1: Nonlinear Reduction of Ballistocardiogram Artifact. ISM Research Memorandum, No. 939. The Institute of Statistical Mathematics, Tokyo, Japan, 2005.
6. **Riera J**, Aubert E, Iwata K, Kawashima R, Wan X, Ozaki T. Fusing EEG and fMRI based on a Bottom-Up Model: Inferring Activation and Effective Connectivity in Neural Masses. ISM Research Memorandum, No. 927. The Institute of Statistical Mathematics, Tokyo, Japan, 2004.
7. **Riera J**, Bosch J, Yamashita O, Kawashima R, Sadato N, Okada T, Ozaki T. fMRI Activation Maps based on the NN-ARx Model. ISM Research Memorandum, No. 906. The Institute of Statistical Mathematics, Tokyo, Japan, 2004.
8. **Riera J**, Watanabe J, Kazuki I., Naoki M., Aubert E., Ozaki T., Kawashima R. A State-Space Model of the Balloon Approach: a Non-Linear Analysis of BOLD Signals. ISM Research Memorandum, No. 880. The Institute of Statistical Mathematics, Tokyo, Japan, 2003.
9. **Riera J**, Valdés P, Tanabe K. Properties of the Electric and Magnetic Lead Fields: Toward a Unified Spline Inverse Solution. ISM Research Memorandum, No. 761. The Institute of Statistical Mathematics, Tokyo, Japan, 2000.
10. Baillet S, **Riera J**, Mangin JF, Garnero L. Evaluation of Inverse Methods and Head Models for EEG Source Localization using a Human Skull Phantom. Technical Report CNRS_UPR640_TIC_1, LENA, Hôpital de la Salpêtrière, Paris, France, 1998.
11. Valdes PA, Jimenez JC, **Riera J**, Biscay R, Ozaki T. Nonlinear EEG Analysis based on a Neural Mass Model. ISM Research Memorandum, No. 652. The Institute of Statistical Mathematics, Tokyo, Japan, 1997.

Book Reviews (give complete bibliographical references)

N/A

OTHER PUBLICATIONS (Outside of discipline, give complete bibliographical references)

N/A

PRESENTED PAPERS, AND LECTURES (List title, date, and venue where presented)

INVITED LECTURES (Note: Students and *Postdoc Fellows* in my lab)

1. **University of Miami Miller School of Medicine.** Seminar Series – “Neurological Disorder Research Group”. Hosts: Kunjan Dave. **Invited Talk.** How Does Biophysical Modeling Help Understand Neuroimaging Data in Brain Disorders? Miami, FL, June 26th, 2017
2. **Yale University - BIOIMAGING SCIENCES SEMINAR.** Host: Fahmeed Hyder (co-sponsored by the Neuroimaging Sciences Training Program). How Does Biophysical Modeling Help Understand Neuroimaging Data in Epilepsy? New Haven, March 29, 2017
3. **Fifth Annual Yale Epilepsy Comprehensive Research Retreat. Invited Talk.** How does biophysical modeling help understand neuroimaging data in epilepsy? Old Saybrook, CT, 30th-31st, 2017.
4. **Vanderbilt Vision Seminar Series.** Hosts: Geoff Woodman and Jeff Schall. **Invited Talk.** How does biophysical modeling help understand neuroimaging data in brain disorders? Vanderbilt University, Nashville, March 27th, 2017.
5. **University of Miami Miller School of Medicine.** Host: Andres Kanner. **Invited Seminar.** Simultaneous EEG-fMRI in epilepsy. Miami, FL, March 16th, 2017.
6. **CNE Seminar Speaker University of Minnesota, BME Dept.,** Host Bin He. **Invited Talk.** How Does Biophysical Modeling Help Understand Neuroimaging Data in Brain Disorders? November 3rd, 2016.
7. **University of Miami Miller School of Medicine.** Department of Radiology. Host: Charif Sidani, **Invited Talk.** EEG-Triggered fMRI in Epilepsy Patients. March 16th, 2016.
8. **Science Lecture Series – “Moving into the Future” Saint Thomas University. Invited Talk.** Distributions of irritative zones are related to individual alterations of resting-state networks in focal epilepsy. July 21st, 2016.
9. **Statistical and Applied Mathematical Sciences Institute (SAMSI).** CCNS Transition Workshop. **Invited Talk:** Distributions of Irritative Zones Are Related to Individual Alterations of Resting-State Networks in Focal Epilepsy. May 4-6, 2016.
10. **Florida Atlantic University. Neuroscience Seminar Series.** Center for Complex Systems & Brain Sciences. Host: Janet Blanks and Steven Bressler. **Invited Talk.** Neurovascular decoupling in preclinical models of focal epilepsy: from intracranial recordings to whole-brain neuroimaging data. January 20th, 2015.
11. **Baptist Health South Florida – Continuing Medical Education.** Host: Sergio Gonzalez Arias, **Invited Seminar.** Brain imaging techniques in preclinical models. August, 2015.
12. **University of Miami Miller School of Medicine.** UM, Miami, Host Andres Kanner. November 24th, 2015. **Invited Talk.** Relevance of preclinical models of focal epilepsy: Reconciliation of intracranial recordings and whole-brain neuroimaging data.
13. **Human Brain Mapping.** (Hawaii, USA), June 14-18, 2015.
 - **Educational Course Lecture:** EEG/MEG inverse problem and integration with fMRI: The role of biophysical models.
 - **Morning Workshop Chair (Jorge Riera, Laura Marzetti):** Time is of the Essence.
14. **Brain Connectivity Workshop (UCSD, La Jolla, Organizers:** Scott Makeig, Jorge Riera, and Michael Breakspear). **Session Chair:** Modeling Connectivity in Brain Electrophysiology. June 11-12, 2015.
15. **Instituto de Neurobiología, UNAM.** Latin American Training Program (SfN) - Imaging the Brain

- Methods for visualization of structure and function of CNS. **Faculty:** fMRI Data Analysis and Modeling. August 10-28, 2015.
16. **Tohoku University IDAC**, Sendai, Japan, June 23rd, 2015. **Invited Talk.** Understanding BOLD signal genesis in focal epilepsy.
 17. **Montreal Neurological Institute** – Brain Imaging Lecture. Host: Alan Evans. **Invited Talk:** Understanding BOLD signal genesis in focal epilepsy. July 22, 2015.
 18. **10th NFSI and 2nd BaCi 2015 Meeting**, Utrecht, the Netherlands. **Invited Talk:** Integrating EEG and MEG Data Based on a Simple Biophysical Model. September 1-5, 2015.
 19. **EEG/LFP Workshop (University of Sheffield)** – Understanding neural excitation/inhibition: implications for typical brain function and clinical disorders. **Invited Talk:** Revisiting electrophysiological phenomena in the brain using a multi-scale approach. September 1st, 2015.
 20. **Brain Institute. Miami Children Hospital, Miami.** Host: MD. Byron Bernal, February 25th, 2015. **Invited Talk.** Relevance of preclinical models of focal epilepsy: Reconciliation of intracranial recordings and whole-brain neuroimaging data.
 21. **University of Reading**, Reading, UK, **Invited Talk:** Neurovascular decoupling in preclinical models of focal epilepsy: from intracranial recordings to whole-brain neuroimaging data. January 23rd, 2014.
 22. **Florida International University** – Computational and Molecular Biology Interest Organization (CaMBIO). **Invited Talk:** Modern Challenges to Link Electrophysiology and Computational Neuroscience. January 31st, 2014.
 23. **University of Texas Brownsville**, Brownsville, TX, **Invited Talk:** Neurovascular Decoupling in Preclinical Models of Focal Epilepsy: from intracranial recordings to whole-brain neuroimaging data. March 7th, 2014.
 24. **University of Electronic Science and Technology of China**, Chengdu, China. **Invited Talk:** Pitfalls in the dipolar model for the neocortical EEG sources. August 20th-22nd, 2014.
 25. **Human Brain Mapping**, Hamburg, Germany. **Speaker - Morning Workshop:** The hemodynamic response and neurovascular coupling: From sources to measures to models. June 8th-12th, 2014.
 26. **Miami Children's Hospital Brain Institute**, Department of Pediatric Neurology and Neurosurgery, Miami, FL. **Invited Talk:** Neurovascular decoupling in focal epilepsy: from models to paradigms. June 17th, 2014.
 27. **University of Miami Miller School of Medicine**, Miami, FL. **Invited Talk:** Neurovascular decoupling in preclinical models of focal epilepsy: from intracranial recordings to whole-brain neuroimaging data. January 13th, 2014.
 28. **San Diego State University (SDSU)**, San Diego, CA. **Invited Talk:** EEG in rodents: challenges and promises. July 25th, 2014.
 29. **University Federal of Rio de Janeiro**, Rio de Janeiro, Brazil. **Invited Talk:** Neurovascular decoupling in preclinical models of focal epilepsy: from intracranial recordings to whole-brain neuroimaging data. December 16th, 2014.
 30. **Florida Hospital Orlando**, Orlando, FL. **Invited Talk:** Neurovascular decoupling in focal epilepsy: from animal models to EEG-fMRI paradigms. November 26th, 2014.
 31. **Yale University. Magnetic Resonance Research Center (MRRC)**, New Haven CT. **Invited Talk:** Pitfalls in the dipolar model for the neocortical EEG sources. July 24th, 2013.
 32. **Herbert Wertheim College of Medicine. Seminar. Florida International University.** Modern techniques for rodent brain imaging. September 23rd, 2013.
 33. **Okazaki International Workshop on Advanced Time Series Analysis Applied to the Neurosciences**, Okazaki, Japan. **Invited Talk:** Microscopic LORETA in the current monopole. December 13th, 2013

34. **Wallace H. Coulter Foundation. Seminar Series. Florida International University.** Dept. Biomedical Engineering. **Interview Talk.** Multimodal functional neuroimaging: Integration of fMRI and EEG/MEG data. January 10, 2012.
35. **Florida International University.** Department of Physics. *Seminar:* Multimodal functional neuroimaging: Integration of fMRI and EEG/MEG data. Aug. 31, 2012.
36. **Wallace H. Coulter Foundation. Seminar Series, Florida International University.** Dept. Biomedical Engineering. Ca^{2+} oscillations in astrocytes during the development of Alzheimer's disease: Impacts on the fMRI-BOLD signal. October 28, 2011.
37. **FENS Forum - Barcelona 2012.** *Where did it happen? Localizing activity from multielectrode local field potential measurements (Wojcik, Daniel K, Einevoll, Gaute T).* Major mechanisms for speed codification in the barrel field of rodents.
38. **Europe Tour (June 5th-17th, 2011)**
 Titles:
Takakuni Goto: A new volumetric CSD analysis method based on the regularization theory
Jorge Riera: A mismatch between the cortical electrical sources at the meso and macro scales
 Institutes:
 - **INSERM U891**, Lyon, France (Prof Olivier Bertrand)
 - **UNIC, CNRS**, Gif Sur Yvette, France (Prof Alain Destexhe)
 - **Norwegian University of Life Sciences**, Oslo, Norway (Prof Gaute Einevoll)
39. **New Horizons in Human Brain Imaging: A focus on Brain Network and Connectivity.** Hawaii, US, December 2010. Stochastic scenery for spontaneous Ca^{2+} oscillations in astrocytes: Signatures in the resting states fMRI.
40. **ATR International, Computational Neuroscience Laboratories** (Host: Dr. Mitsuo Kawato). Kyoto, Japan, November, 2010. The mesoscale: a crucial level to understand the neuroimaging.
41. **Europe Tour (February 5th-19th, 2009)**
 Title: **Microscopic conductivity profile in the cerebral cortex of Wistar rats.** Riera J (*Speaker*), Goto T, Enjieu-Kadji H, Jimenez JC, Morito R, Kawashima Ryuta.
 Institutes:
 - U821 - Dynamique Cérébrale et Cognition. INSERM, Lyon I University, Lyon, France (host: Dr. Olivier Bertrand, Director)
 - Max Plank Institute Biological Cybernetics, Tübingen, Germany (host: Dr. Kamil Uludag, group leader)
42. **24th Annual Meeting of Japan Biomagnetism and Bioelectromagnetics Society.** Kanazawa, Ishikawa, Japan, May 28-29, 2009. Chairman: Isao Hashimoto, Kanazawa Institute of Technology. The most important neuronal signatures in neuroimaging “a view of the mesoscale”.
43. **Brain Activity Modeling: from fine to coarse scale.** Organizers: T. Huppert, H. Benali, F. Lesage. Functional Brain Imaging and Mathematics thematic semester at the Centre de Recherches Mathématiques in Montréal, Canada, 17-22 August 2009. The most important neuronal signatures in neuroimaging “a view of the mesoscale”.
44. **Inverse Problems and multimodal data fusion in brain imaging.** Responsible: S. Baillet, C. Grova, JM Lina, Functional Brain Imaging and Mathematics thematic semester at the Centre de Recherches Mathématiques in Montréal, Canada, 24-29 August 2009. Modeling the Genesis of the PCD from a mesoscopic viewpoint “the relationship with EEG & MEG data”.
45. **Mini-workshop: Neuroimaging, Modeling and Databasing.** Sendai, Japan, 2009. Modeling Neuroimaging: a mesoscopic view from two-photon laser scanning microscopy and electrophysiological recordings to fMRI signals.
46. **4th Cuban Congress & 1st Ibero-American Workshop on Clinical Neurophysiology.** Varadero, Cuba, 11th-14th March, 2008. The Micro-Architecture of the Cerebral Cortex:

- impacting on functional neuroimaging.
47. **The Brain Connectivity Workshop.** Sydney, Australia, 2008. Exploring interhemispheric connections through a dynamical model of the neocortex.
 48. **The 3rd ISN Special Neurochemistry Conference. 8th International Meeting on Brain Energy Metabolism-**“Neurodegeneration and Regeneration”, Beijing, China, June 27-July 1, 2008. **Riera J, Enjieu Kadji H, Ogawa T, Morito R, Goto T, Kawashima R.** The astrocytic networks participate in the functional hyperemia via metabolic waves induced and sustained by extracellular glutamate.
 49. **The University of Hong Kong** (Prof Ed Wu). The department of Electrical and Electronic Engineering, Hong Kong, 2008. Seminar: Analysis of Neuronal Dynamics in Cerebral Cortex from External Electrical Recordings and BOLD Signal.
 50. **USA Tour (November 23rd-29th, 2008)**
 Title: **Modeling the mesoscopic scale in functional neuroimaging. Jorge Riera (Speaker)**
Institutes:
 - Optical Imaging Lab, NMR Center, CIMIT, Massachusetts General Hospital, Harvard Medical School (host: Dr. David Boas, Director)
 - Diagnostic Radiology and Biomedical Engineering, Schools of Medicine and Engineering, Yale University (host: Dr. Fahmeed Hyder, group leader)
 - Center for Complex Systems & Brain Sciences, Florida Atlantic University (host: Dr. Viktor Jirsa, group leader)
 51. **16th International Conference on Biomagnetism, BIOMAG2008,** August 25th-29th, Sapporo, Japan, 2008.
 - **Symposium 4: Multimodal imaging (Organizers: N. Fujimaki, Japan and M.S. Hamalainen, USA).** S4-2 Experimental evidence and modelling for the astrocytic networks underlying sustained functional hyperemia via metabolic waves. **J. Riera (Speaker), H. Enjieu-Kadji, T. Ogawa, R. Morito, T. Goto, R. Kawashima**
 52. **2nd International Congress of Bioinformatics and Neuroinformatics.** "12th International Convention and Fair Informatics. Havana, Cuba, February 12th-16th, 2007. Nonlinear Local Electrovascular Coupling. **Riera J (Speaker), Jimenez JC, Ozaki T, Kawashima R, Wan X.**
 53. 平成 19 年度・第 3 回加齢医学研究所・生化学セミナー**3rd Biochemistry Seminar,** IDAC, Sendai, Japan, 2007.
 54. 日時：平成 19 年 6 月 15 日（金） 午後 4 — 5 時 場所： 加齢研大会議室 Date: Friday, June 15, 2006, 4 pm -5 pm, Place: Large Conference Room in IDAC 演題：The Micro-Architecture of the Cerebral Cortex: its impact on Functional Neuroimaging in Humans 講師：脳機能開発研究分野 **Jorge Riera** 先生.
 55. **The Fourth Lyon-Tohoku Engineering and Science Forum Toward the Joint Laboratory Schedule.** Sendai, Japan, December 12th-14th, 2007. A Methodology to Analyze Neuronal Dynamics at a Small Scale in the Cerebral Cortex from External Electrical Recordings and Bold Signal.
 56. **ATR International, Computational Neuroscience Laboratories** (Host: Dr. Mitsuo Kawato). Kyoto, Japan, December 3rd-5th, 2007. The Micro-Architecture of the Cerebral Cortex: its impact on Functional Neuroimaging in Humans.
 57. **5th International Workshop on Brain Connectivity** (Organizers: Jorge Riera and Karl Friston). Sendai, Japan, 2006. **Session IV: Electro-vascular coupling and brain energy budget** (Barry Horwitz). The Multiple Roles of Nitric Oxide (NO) in Neurovascular coupling: A Model of NO Concentration in Brain Tissue.
 58. 第37回東北大学加齢医学研究所シンポジウム. **37th IDAC Symposium (International).** 脳画像研究の最前線. Recent Advancement of Brain imaging. - 形態からダイナミクスまで -

日時 : Sendai, Japan, October 30, 2006. The micro-architecture of the cerebral cortex: its impact on neuroimaging studies in humans.

59. **The First International Conference on Complex Medical Engineering.** *Workshop on Where and When: Combining Functional Imaging and Electrophysiology.* Organizers: Dr. Hidenao Fukuyama and Dr. Robert Turner. Takamatsu, Japan, May 15th-18th, 2005. What can be observed from functional neuroimaging?
60. **The 5th International Forum on Language, Brain and Cognition. Natural Language in Computer and Brain Sciences: Toward a Unified View.** LBC Center, Sendai, Japan, October 28th-29th, 2005. What can be observed from functional neuroimaging?
61. **Montréal Neurological Institute.** McConnell Brain Imaging Center (BIC tenure-track position, *place:* de Grandpre Communication Centre). Montreal, Canada, December 8, 2005. Nonlinear Local Electro-Vascular Coupling. Part I: A Theoretical Model. Part II: From Data To Neuronal Masses.
62. **3rd Brain Connectivity Workshop.** Havana, Cuba, April 26th-29th, 2004. Bottom-up vs. top-down strategies: modeling the fusion of multi-modality neuroimages, causality and connectivity patterns.
63. **University College London (UCL). Functional Imaging Laboratory** (Host: Dr. Karl Friston). London, UK, November, 2004. Neuronal Causality and Connectivity: Fusion of EEG and fMRI data.
64. **Workshop on Statistical Problems of Human Brain Mapping.** (*Minicourses:* Introduction to brain mapping and stochastic algorithms. Co-organized by: Cuban Neuroscience Center, University of Havana and the Université Paris-Sud). Havana, Cuba, February 17th-21st, 2003. fMRI & NIRS fusion.
65. **Brain Science Institute, RIKEN. Invited seminar.** Host: Dr. Yoko Yamaguchi, Lab. for Dynamics of Emergent Intelligence. Wako-shi, Japan, April 18th, 2003. A state-space model of the Balloon approach: a non-linear analysis of BOLD signals.
66. **The Second International Forum on Language, Brain, and Cognition: Brain Imaging, Aphasiology, and Computational Modeling** (The Tohoku University 21st Century COE Program in Humanities). Sendai, Japan, October 12, 2003. Future prospects for fusion of multi-modality functional imaging techniques.
67. **Recent Advances in Statistical Research and Data Analysis.** Institute of Statistical Mathematics (Chairperson: Yoshihiko Ogata). Tokyo, Japan, March 21st, 2000. Sources Generators Based On A Statistic Cortical Atlas. **Jorge J. Riera, P. Valdes, E. Aubert**
68. **First Regional Meeting of "The Caribbean Brain Research Organization"**. Havana, Cuba, 1994. Neural Mass Model of the EEG.
69. **Fourth International Symposium of the International Society for Brain Electromagnetic Topography.** Havana, Cuba, July, 1993. Source Analysis in the Frequency Domain. **Riera J., Valdes P., Biscay R., Grave de Peralta R., Bosch J.**
70. **I Latin-American Congress for Application of the Informatics in Health.** Havana, Cuba, 1992. Quantitative Analysis of the EEG in the Health System. **Riera J., Valdés P., Báez O.**

PRESENTED PAPERS (Note: Students and Postdoc Fellows in my lab. O-Oral & P-Poster)

1. **Walk The Talk For Epilepsy.** Epilepsy Foundation Florida. Tropical Park, Miami, FL, May 6th, 2017.
 - Electroencephalogram (EEG). Carolina Moncion, Veronica Perdomo, **Jorge Riera.** (P)
2. **7th Annual BME Undergraduate Research Day**, FIU, Miami, FL, March 3rd, 2017
 - Lamina profile underlying the propagation of CSD: from single neurons to population activity. Daniel E. Rivera, Darlene Ramos, Sarahy Garcia, Yisel Frometa, Yoichiro Mori, **Jorge Riera.** (P)

- Evaluating Best AAV Serotypes for in vivo Light-Based Intervention of Brain Astrocytes. Diana Borrego, Lakshmini Balachandar, Jeremy Chambers, **Jorge Riera**. (P)
 - Irritative zones in focal cortical dysplasia: an EEG-fMRI case study. Fernando Gonzalez, Pedro Antonio Valdez, Byron Bernal, **Jorge Riera**. (P)
3. **Graduate Student Appreciation Week (GSAW)**, FIU, Miami, FL, March 27th – 28th, 2017
 - Evaluating best AAV serotypes for in vivo light-based intervention of brain astrocytes. Lakshmini Balachandar, Diana Borrego, Jeremy Chambers, **Jorge Riera (Provost Awards, 1st Place)**. (O)
 4. **Sunposium™ 2017**. Max Planck Florida Institute for Neuroscience, Jupiter, FL, Feb 13th – 14th, 2017.
 - Laminar profile underlying the propagation of CSD: from single neurons to population activity. Daniel E. Rivera, Darlene Ramos, Sarahy Garcia, Yisel Frometa, Yoichiro Mori, **Jorge Riera**. (P)
 - Evaluating best AAV serotypes for in vivo light-based intervention of brain astrocytes. Lakshmini Balachandar, Diana Borrego, Jeremy Chambers, **Jorge Riera**. (P)
 5. **2017 Conference for Undergraduate Research at FIU (FIUCUR)**, Miami FL, March 29th, 2017.
 - Resting-state and epileptogenic network interactions: A case study. Natasja Hirabayashi, Pedro A Valdes-Hernandez, David Quesada, Byron Bernal, **Jorge Riera**. (P)
 - Propagation of cortical spreading depression: Frequency and velocity. Daniel E. Rivera, **Jorge Riera**. (P)
 - Symposium – Quantitative Electrophysiology in Neuroscience (Chair: **Jorge Riera**). Light-based stimulation of brain astrocytes: In vivo quantitative electrophysiology. Diana Borrego, Lakshmini Balachandar, **Jorge Riera**. (O)
 - Symposium – Quantitative Electrophysiology in Neuroscience (Chair: **Jorge Riera**). Irritative zones in focal cortical dysplasia: an EEG-fMRI case study. Fernando Gonzalez, Byron Bernal, Pedro A. Valdez-Hernandez, **Jorge Riera**. (O)
 - Symposium – Quantitative Electrophysiology in Neuroscience (Chair: **Jorge Riera**). In vivo quantitative electrophysiology cortical spreading depression. Daniel Rivera, **Jorge Riera**. (O)
 6. **19th Annual Biomedical & Comparative Immunology (BCI) Symposium**. Miami, FL, March 30th - 31st, 2017
 - Propagation of cortical spreading depression: Frequency and velocity. Daniel E. Rivera, **Jorge Riera**. (P)
 7. **Florida Undergraduate Research Conference (FURC)**, Boca Raton, FL, Feb 24th – 25th, 2017
 - Propagation of cortical spreading depression: Frequency and velocity. Daniel E. Rivera, **Jorge Riera**. (P)
 8. **31st Annual National Conference on Undergraduate Research (NCUR)**. University of Memphis - April 6-8, 2017
 - Females of a moth with two-celled ears discriminate acoustic stimuli with different temporal patterns. Jessica Hernandez, Francisco Coro, **Jorge Riera**. (P)
 9. **2016 BMES Annual Meeting**, Minneapolis, MN, October 5th–8th, 2016
 - Laminar Profile Underlying the Propagation of CSD: From Single Neurons to Population Activity. Daniel Rivera, Darlene Ramos, Sarahy Garcia, Yisel Frometa, Yoichiro Mori, **Jorge Riera**. (P)
 - EEG Dynamics in Epilepsy: From IED inverse solutions to microstates. Alexandra Rodriguez, Pedro Figueredo, **Jorge Riera**. (P)
 10. **6th Annual BME Undergraduate Research Day**, FIU, Miami, FL, February 29th, 2016

- Creating a platform for combining wireless electrophysiological signals and physiological responses. Tommaso Benigni, Celine Wassaf, **Jorge Riera**. (P)
11. **Society for Neuroscience 2016 Annual Meeting**, San Diego, Nov 12th-16th, 2016.
 - Serotype based evaluation of an optogenetic construct targeting rat astrocytes. Lakshmini Balachandar, Diana Borrego, Jeremy Chambers, **Jorge Riera**. (P)
 - Laminar profile underlying the propagation of CSD: From single neurons to population activity. Darlene Ramos, Sarahy Garcia, Yisel Frometa, Javier How, Daniel Rivera, Yoichiro Mori, **Jorge Riera**. (P)
 12. **30th Anniversary National Conference on Undergraduate Research (NCUR)**. University of North Carolina, Asheville, April 7th-9th, 2016.
 - Laminar profile underlying the propagation of CSD: from single neurons to population activity. Darlene Ramos, Sarahy Garcia, Yisel Frometa, Javier How, **Jorge Riera**. (P)
 - Females of a moth with two-celled ears discriminates acoustic stimuli with different temporal patterns. Jessica Hernandez, Francisco Coro, **Jorge Riera**. (P)
 13. **6th Annual BME Graduate Research Day**, Florida International University, Nov 4th, 2016.
 - Serotype based evaluation of an optogenetic construct targeting rat astrocytes. Lakshmini Balachandar, Diana Borrego, Jeremy Chambers, **Jorge Riera**. (P)
 14. **Florida Undergraduate Research Conference (FURC)**, University of Tampa, Feb 26th-27th, 2016
 - Laminar profile underlying the propagation of CSD: from single neurons to population activity. Darlene Ramos, Sarahy Garcia, Yisel Frometa, Javier How, **Jorge Riera**. (P)
 - Females of a moth with two-celled ears discriminates acoustic stimuli with different temporal patterns. Jessica Hernandez, Francisco Coro, **Jorge Riera**. (P)
 15. **Denice Denton Emerging Leaders Workshop**. Madison, Wisconsin, June 3rd, 2016. (O)
 16. **2016 Conference for Undergraduate Research at FIU (FIUCUR)**, Miami FL, March 31st, 2016.
 - Laminar profile underlying the propagation of CSD: from single neurons to population activity. Darlene Ramos, Sarahy Garcia, Yisel Frometa, Javier How, Yoichiro Mori, **Jorge Riera**. (P)
 - Females of a moth with two-celled ears discriminates acoustic stimuli with different temporal patterns. Jessica Hernandez, Francisco Coro, **Jorge Riera**. (P)
 - Symposium – Quantitative Electrophysiology in Neuroscience (Chair: **Jorge Riera**). EEG dynamics in epilepsy: From IED inverse solution to microstates. Alexandra Rodriguez, Lorena Figueredo, Pedro Figueredo, **Jorge Riera**. (O)
 - Symposium – Quantitative Electrophysiology in Neuroscience (Chair: **Jorge Riera**). Dysfunction of neurovascular/metabolic coupling in chronic focal epilepsy. Yisel Frometa, Yinchen Song, Rafael A. Torres, Sarahy Garcia, Jihye Bae, Abhay Deshmukh, Wei-Chiang Lin, Ying Zheng, **Jorge Riera**. (O)
 - Symposium – Quantitative Electrophysiology in Neuroscience (Chair: **Jorge Riera**). Laminar profile underlying the propagation of CSD. Darlene Ramos, Sarahy Garcia, Yisel Frometa, Javier How, Yoichiro Mori, **Jorge Riera**. (O)
 17. **AES Annual Meeting**. Houston, Texas, Dec 2nd-6th, 2016.
 - Histological characterization of IED-generating brain regions using a preclinical model of FCD. Abhay Deshmukh, Jared Leichner, Jihye Bae, Yinchen Song, Wei-Chiang Lin, **Jorge Riera**. (P)
 18. **World Congress of Psychophysiology**, Havana, Cuba, August 31st – September 4th, 2016
 - Validating non-invasive EEG source imaging using optimal electrode configurations on a representative rat head model. Pedro A Valdes Hernandez, **Jorge Riera**. (O)

19. **Photonics in HealthCare**. BME-FIU, Miami. April 2nd - 3rd, 2015.
- Modeling neuro-vascular/metabolic coupling during ictal activity in a preclinical model of chronic focal epilepsy: Implications for EEG-fMRI techniques. Yinchen Song, Rafael A. Torres, Jihye Bae, Sarahy Garcia, Yisel Frometa, Abhay Deshmukh, Ying Zheng, Wei-Chiang Lin, **Jorge Riera**. (P)
 - Quantitative evaluation of optogenetically-induced calcium signaling in astrocytes. Lakshmini Balachandar, Andrea Raymond, Madhavan Nair, Josue Santana, **Jorge Riera**. (P)
20. **5th Annual BME Undergraduate Research Day**, FIU, Miami, FL, March 20th, 2015
- Modeling and simulation of light-activated Ca²⁺ signaling in astrocytes. Josue Santana, Lakshmini Balachandar, **Jorge Riera**. (P)
 - A methodology for “in real-time” identification of psychological conditions in children with ASD. Celine Wassaf, Alberto Zuniga, Raul Camarca, Tommaso Benigni, Aylin Acosta, Aleida Lanza, Deborah Safko, Christine Lisetti, **Jorge Riera**. (P)
21. **Society for Neuroscience 2015 Annual Meeting**, Chicago, Oct 17th-21st, 2015.
- P1 in somatosensory evoked EEG solely reflects neural excitation: a concurrent EEG and LFP study. Michael Bruyns-Haylett, Jingjing Luo, Aneurin Kennerley, Samuel Harris, Luke Boorman, Elizabeth Milne, Nicolas Vautrelle, Ben Whalley, Myles Jones, Jason Berwick, **Jorge Riera**, Ying Zheng. (P)
 - Alterations of neurovascular coupling in rats with focal epilepsy. Yinchen Song, Rafael A. Torres, Sarahy Garcia, Yisel Frometa, Jihye Bae, Abhay Deshmukh, Ying Zheng, Wei-Chiang Lin, **Jorge Riera**. (P)
 - How attention modulates neural excitation and inhibition. Jingjing Luo, Michael Bruyns-Haylett, Aneurin Kennerley, Samuel Harris, Luke Boorman, Elizabeth Milne, Ben Whalley, Myles Jones, Jason Berwick, Daniel Coca, Stephen A. Billings, **Jorge Riera**, Ying Zheng. (P)
 - Modeling and simulation of light-activated Ca²⁺ signaling in astrocytes. Josue Santana, Lakshmini Balachandar, **Jorge Riera**. (Dynamic P)
22. **Annual National Conference on Undergraduate Research (NCUR)**. Eastern Washington University - April 16-18, 2015.
- Modeling and Simulation of Light-Activated Ca²⁺ Signaling in Astrocytes. Josue Santana, Lakshmini Balachandar, **Jorge Riera**
23. **International brain Research organization IBRO-2015**. Rio de Janeiro, July 7th-11th, 2015.
- Application of a Bayesian Technique to Estimate the Hidden States of the Biophysical Model for Calcium Oscillations in Neurons. Estumano DC, Carvalho RC, Benk E, Orlande HRB, Colaço MJ, **Riera JJ**. (P)
24. **Graduate Student Appreciation Week (GSAW)**, FIU, Miami, FL, April 6th – 7th, 2015
- Electrophysiological and hemodynamic signatures of epileptic neocortex in rats with focal cortical dysplasia: Implications on epilepsy surgery. Yinchen Song, **Jorge Riera**. (P)
 - A quantitative evaluation of optogenetically-induced calcium signaling in astrocytes. Lakshmini Balachandar, **Jorge Riera**. (P)
25. **5th Annual BME Graduate Research Day**, Florida International University, Oct 23rd, 2015.
- Histological characterization of IED-generating brain regions using a preclinical model of FCD. Abhay Deshmukh, Jihye Bae, Yinchen Song, **Jorge Riera**. (P)
26. eMERGE Americas, Miami, May 4th-5th, 2015.
- Brain Break Throughs- lighting Neuroactivity. **Jorge Riera** (P)
27. **23rd ABCM International Congress of Mechanical Engineering**. Rio de Janeiro, Dec 6th-11th, 2015.

- Application of technique of Monte-Carlo Markov chain in model of mechanism calcium induced calcium release in neurons. Diego C. Estumano, Eric Benk, Raphael C. Carvalho, Helcio RB Orlande, Marcelo J Colaço, Jorge Riera. (P)
28. **2015 BMES Annual Meeting**. Tampa, FL, October 7th-10th, 2015.
- Electroencephalographic Source Imaging in Rats: Methodological Aspects and Validation. J. Bae, P. Valdes-Hernandez, Y. Song, **J. Riera**. (P)
 - Quantitative Evaluation Of Optogenetically-Induced Calcium Signaling In Astrocytes. L. Balachandar, A. Raymond, M. Nair, J. Santana, **J. Riera**. (P)
 - A Biophysical Model to Explain Sustained Oscillations in the Transmembrane Current of Cytomegalic Neurons. E. Benk, D. Estumano, **J. Riera**. (P)
 - Creating a Platform for Combining Wireless Electrophysiological Signals and Physiological Responses. Tommaso Benigni, Celine Wassaf, **Jorge Riera**. (P)
29. **IWSP7: Seventh International Workshop on Seizure Prediction**. Epilepsy Mechanisms, Models, Prediction and Control. The University of Melbourne, 3rd– 6th, 2015.
- Neurovascular decoupling during epileptogenesis in rats. Rafael Torres, Yinchen Song, Wei-Chiang Lin, **Jorge Riera**. (P) (**Travel Award**)
30. **2015 Conference for Undergraduate Research at FIU (FIUCUR)**, Miami FL, March 17th, 2015.
- Modeling and Simulation of Light-Activated Ca²⁺ Signaling in Astrocytes. Josue Santana, Lakshmini Balachandar, **Jorge Riera**. (P)
31. **Florida Undergraduate Research Conference (FURC)**. Miami, FL, February 21-22, 2014.
- Anggie Ferrer, Lakshmini Balachandar, Andrea Raymond, Madhavan Nair, **Jorge Riera**. Optogenetically Induced Calcium Signaling in Astrocytes. (P)
 - Rafael A. Torres, Yinchen Song, Wei-Chiang Lin, **Jorge J. Riera**. A Pilot Study of Neurovascular Decoupling in Rats with Epilepsy. (P)
 - Winnie Medina, Andrea Charara, Janet Villafranca, Yinchen Song, Jaimit Parikh, Wei-Chiang Lin, **Jorge Riera**. Effects of pilocarpine doses on a rat model of TLE epilepsy. (P)
 - Eric Benk, Diego Estumano, Carlos Cepeda (UCLA), **Jorge Riera**. Computer Simulations to Evaluate the Role of Cytomegalic Neurons in the Genesis of Seizures in FCD. (P)
32. **BME Graduate Research Day** - Department of Biomedical Engineering. Florida International University, September 20th, 2013.
- Yinchen Song, Basavaraju G Sanganahalli, Fahmeed Hyder, Wei-Chiang Lin, **Jorge J Riera**. A Simultaneous fMRI and EEG Study of the Interictal Epileptiform Discharges in a “Double-hit” Rat Model of Focal Cortical Dysplasia. **First Prize** (P)
33. **Graduate Student Appreciation Week (GSAW)** - FIU. March 31st, 2014.
- Yinchen Song, Basavaraju G Sanganahalli, Fahmeed Hyder, Wei-Chiang Lin, **Jorge Riera**. A concurrent fMRI and EEG Study of Epileptogenesis in a Rat Model of Focal Cortical Dysplasia. **First Prize – College of Engineering and Computing**. (O)
34. **BME Undergraduate Research Day** – Dept. Biomedical Engineering. FIU, March 21st, 2014.
- Winnie Medina, Vidya Sagar, Hong Ding, Jared Leichner, Jihye Bae, Karla Munoz Caamano, Madhavan Nair, **Jorge J. Riera**. Cognitive and Metabolic Effects of Nanoparticles on Deep Brain Activity. (P)
35. **11th Annual Conference, Advanced Research and Creativity in Honors (ARCH)** program. Florida International University, March 17 – 18, 2014.
- Rafael Torres, **Jorge Riera** - A Neurovascular Decoupling during Seizures in Rats with Focal Epilepsy. (P)
 - Anggie Ferrer, **Jorge Riera** - Optogenetically Induced Calcium Signaling in Astrocytes. (P)
36. **Florida International University, College of Engineering and Computing 30th Anniversary**

- Celebration**, Miami, FL, October 30th, 2014.
- Yinchen Song, **Jorge Riera**. Epileptogenesis in Focal Cortical Dysplasia. (P)
37. **BME Graduate Research Day** – Dept. Biomedical Engineering, FIU, November 7th, 2014.
- Electrophysiological and hemodynamic signatures of epileptic neocortex in rats with focal cortical dysplasia: Implications on epilepsy surgery. Yinchen Song, Rafael A. Torres, Jihye Bae, Abhay Deshmukh, Wei-Chiang Lin, **Jorge J. Riera**. (P)
 - A procedure for Immunohistochemistry on focal epileptic rats. Abhay Deshmukh, Chelsie Boodoo, **Jorge Riera**. (P)
 - A quantitative evaluation of optogenetically-induced calcium signaling in astrocytes. Lakshmini Balachandar, Andrea Raymond, Madhavan Nair, **Jorge Riera**. **First Prize**. (P)
38. **Human Brain Mapping**. Hamburg, Germany, June 8th-12th, 2014.
- Brain source analysis of IEDs using a preclinical model of focal epilepsy. Jihye Bae, Abhay Deshmukh, Yinchen Song, **Jorge Riera**. (P)
 - A Simultaneous fMRI and EEG Study of the Interictal Epileptiform Discharges in a “Double-hit” Rat Model of Focal Cortical Dysplasia. Yinchen Song, Basavaraju G Sanganahalli, Fahmeed Hyder, Wei-Chiang Lin, **Jorge J Riera**. **Travel Award**. (P)
39. **BRAIN Grand Challenge Conference**, Washington, D.C., November 13th-14th, 2014.
- Electrophysiological and hemodynamic spatiotemporal signatures of paroxysmal neuronal activities in rat neocortex and their implication on human neurosurgery. Yinchen Song, Rafael A. Torres, Jihye Bae, Abhay Deshmukh, Wei-Chiang Lin, **Jorge Riera**. **Young Investigator Award**. (P)
40. **BrainStorm 3.2 Workshop**. MEG and EEG Analysis, FIU, Miami FL, October 13th-14th, 2014.
41. **Neuroscience 2014**, Society for Neuroscience, Washington DC, November 15th-19th, 2014.
- A quantitative evaluation of optogenetically-induced calcium signaling in astrocytes. Lakshmini Balachandar, Andrea Raymond, Madhavan Nair, **Jorge Riera**. (P)
 - Activation and deactivation in blood-oxygen-level dependent signals on a preclinical model of focal epilepsy. Yinchen Song, Basavaraju G Sanganahalli, Fahmeed Hyder, Wei-Chiang Lin, **Jorge Riera**. (P)
 - A Neurovascular Decoupling during Ictal Activity in Rats with Focal Epilepsy. Rafael A. Torres, Yinchen Song, Wei-Chiang Lin, **Jorge J. Riera**. (P)
 - An EEG methodology to localize the irritative cortices in a preclinical model of focal epilepsy. Jihye Bae, Yinchen Song, Abhay Deshmukh, **Jorge J Riera**. (P)
42. **Curing the Epilepsies 2013: Pathways Forward** (Sponsored by National Institute of Neurological Disorders and Stroke). Bethesda, Maryland. April 17-19, 2013.
- Yinchen Song, Jared Leichner, Sanjiv Bhatia, John Ragheb, Prasanna Jayakar, **Jorge Riera**, Wei-Chiang Lin. Hemodynamic Low-Frequency Oscillations May Locate Epileptic Brain Lesions. (P)
43. **29th Southern Biomedical Engineering Conference (SBEC 2013)**. Miami, FL, USA, 3-5 May, 2013.
- Eric Benk, **Jorge Riera**. Severe Focal Cortical Dysplasia: Cytomegalic Neuron Simulation (O)
 - Andrea Charara, Yinchen Song, Racquel Aking, Wei-Chiang Lin, **Jorge Riera**. Effects of Pilocarpine Doses on a Rat Model of FCD Epilepsy. (P)
 - S5-1 – Bioimaging II (Session Chair: **Jorge Riera**)
44. **1st FIU-UM Computational Biology Research Day**, FIU, October 9, 2013.
- Eric Benk, Jorge Riera. Severe Focal Cortical Dysplasia: Cytomegalic Neuron Simulation (P)
45. **Coulter College** - Faculty Program, Biomedical Engineering Society Annual Meeting, Atlanta, Georgia, October 23 – 24, 2012.

46. **22nd Annual Neuroscience Research Day, University of Miami.** Miami, FL, December 6th, 2013.
- Rafael A. Torres, Yinchen Song, Wei-Chiang Lin, **Jorge J. Riera**. A Pilot Study of Neurovascular Decoupling in Rats with Epilepsy. (P)
 - Winnie Medina, Andrea Charara, Janet Villafranca, Yinchen Song, Jaimit Parikh, Wei-Chiang Lin, **Jorge Riera**. Effects of pilocarpine doses on a rat model of TLE epilepsy. (P)
 - Eric Benk, Diego Estumano, Carlos Cepeda (UCLA), **Jorge Riera**. Computer Simulations to Evaluate the Role of Cytomegalic Neurons in the Genesis of Seizures in FCD. (P)
 - Yinchen Song, Basavaraju G Sanganahalli (Yale Univ.), Fahmeed Hyder (Yale Univ.), Wei-Chiang Lin, **Jorge J Riera**. A Simultaneous fMRI and EEG Study of the Interictal Epileptiform Discharges in a “Double-hit” Rat Model of Focal Cortical Dysplasia. (P)
 - Abhay Deshmukh, Jihye Bae, Yinchen Song, **Jorge Riera**. A methodology to perform brain source imaging in rats with focal epilepsy. (P)
 - **Jorge Riera**, Takakuni Goto, Ryuta Kawashima. A methodology for fast assessments to the electrical activity of barrel fields in vivo: from population inputs to single unit outputs. (P)
47. **Neuroscience 2012.** Society for Neuroscience. New Orleans, US, October 13-17, 2012.
- **Riera J**, Martinez-Cancino R, Bosch J, Sumiyoshi A, Nonaka H, Uchida T, Kawashima R. Resting-state functional MRI in Alzheimer disease: A study based on an animal model. (P)
48. **BioFlorida Conference.** Miami, FL, USA, Oct 7-9, 2012.
- BioScience Track (Met Ballroom 7): Multidisciplinary Opportunities & Advances between ‘Bio’ and ‘Engineering’ (Part 2). **Moderator: Jorge Riera**
49. **11th Annual Life Science Conference, EDC BioTech.** Florida International University, May 9, 2012.
- Pitfalls in the dipolar model for the neocortical EEG sources. **Riera JJ**, Ogawa T, Goto T, Sumiyoshi A, Nonaka H, Evans A, Miyakawa H, Kawashima R. (P)
50. **Brain Connectivity Workshop.** Berlin, Germany, 2010. **Session 1: Modeling hierarchic connectivity (Chair: Jorge Riera)**
51. **The 33rd Annual Meeting of the Japan Neuroscience Society.** Kobe, Japan, 2010.
- A critical view of the dipolar model in the neocortex. **Riera J**, Goto T, Ogawa T, Sumiyoshi A, Nonaka H, Kanno A, Kose K, Miyakawa H, Kawashima R. (P)
 - A volumetric current source density analysis with realistic geometrical properties and conductivity profiles in the somatosensory cortex of rats. Goto T, Ogawa T, Kawashima R, **Riera J**. (P)
52. **Annual meeting of the Asia-Pacific Signal and Information Processing Association (APSIPA)** ASC, Singapore, December 2010. Note: *Finalist for the Best Paper Awards (Symposium)*.
- Pitfalls in the Dipolar Model of the Neocortical EEG Sources (O: **Jorge Riera**)
53. **The Brain Connectivity Workshop.** Maastricht, Netherlands, 2009. Session: The oscillating brain. *Chair: Jorge Riera.*
54. **The 3rd ISN Special Neurochemistry Conference. 8th International Meeting on Brain Energy Metabolism-**“Neurodegeneration and Regeneration”, Beijing, China, June 27-July 1, 2008.
- Harmful increase of astrocytic Ca²⁺ trigger reactive oxygen species production. Morito R, Goto T, Miyazaki K, Enjieu Kadji HG, Uchida T, Kawashima R, **Riera J**. (P)
55. **The 31st Annual Meeting of the Japan Neuroscience Society, 9-11 July 2008, Tokyo, Japan**
- Astrocytic Ca²⁺ waves and sustained functional hyperemia. **Riera J**, Enjieu Kadji H, Ogawa T, Morito R, Goto T, Kawashima R (O)
 - Harmful increase of astrocytic Ca²⁺ trigger ROS production. Morito R, Miyazaki K, Enjieu Kadji HG, Uchida T, Kawashima R, **Riera J**. (P)
 - A model for extracting several neuronal activity attributes from LFPs. Ogawa T, Goto T, Jiménez JC, Ozaki T, Kawashima R, **Riera J**. (P)

- Microscopic conductivity profile in the cerebral cortex of Wistar rats. *Goto T, Ogawa T, Enjieu Kadji H, Kawashima R, **Riera J***. (P)
56. **Gordon Research Conference**. Brain Energy Metabolism and Blood Flow. Proctor Academy, Andover, USA, 2008, (*Chairman*). Electrical Signals of Neurometabolism and Neurovascular Coupling.
57. **The 23rd International Symposium on Cerebral Blood Flow, Metabolism & Function and the 8th International Conference on Quantification of Brain Function with PET**, Osaka, Japan, 2007.
- Nonlinear Local Electrovascular Coupling. **Riera J**, Jimenez JC, Ozaki T, Kawashima R, Wan X. (P)
58. **Neuro 2007: The 30th Annual Meeting of the Japan Neuroscience Society (JNS), The 50th Annual Meeting of the Japanese Society for Neurochemistry (JSN), The 17th Annual Meeting of the Japanese Neural Network Society (JNNS)**. Yokohama-shi, Japan, 2007.
- Nonlinear local neurovascular coupling in the cerebral cortex. **Riera J**, Jimenez JC, Ozaki T, Kawashima R, Wan X. (P)
59. **12th Annual Meeting of the Organization for Human Brain Mapping**. Florence, Italy, 2006.
- The intrinsic oscillations of human visual cortex: the sources of alpha rhythm. Wan X, Sekiguchi A, Yokoyama S, Fukushima A, **Riera J**, Kawashima R. (P)
 - Approaching neuronal computation and functional neuroimaging. **Riera J**, Jimenez JC, Ozaki T, Wan X, Kawashima R. (P)
60. **CREST-RIKEN Workshop**. Real Time Computing and Neural Dynamics in the Brain. Wako-shi, Japan, March 2nd-4th, 2005.
- The correlation of concurrent fMRI and EEG with visual stimuli in humans. Xiaohong Wan, **Jorge Riera**, Kazuki Iwata, Jobu Watanabe, Masaharu Kitamura, Ryuta Kawashima. (P)
61. **11th Annual Meeting of the Organization for Human Brain Mapping**. Toronto, Canada, 2005.
- Wan X, Iwata K, **Riera J**, Kitamura M, Kawashima R. Artifact reduction for simultaneous EEG and fMRI recording. (P)
- Wan X, **Riera J**, Iwata K, Watanabe J, Kitamura M, Kawashima R. The Correlation of concurrent fMRI and EEG with visual stimuli in humans. (P)
- Sassa Y, Sugiura M, Jeong H, Miura N, Iwata K, Akitsuki Y, Yokoyama S, Watanabe J, Ikuta N, Okamoto H, Uchida S, **Riera J**, Horie K, Sato S, Kawashima R. Communicative speech production activates the frontal and anterior cingulate cortices: an fMRI study. (P)
- Iwata K, **Riera J**, Wan X, Aubert E, Miwakeichi F, Kawashima R. Orthogonality of Anterior and Posterior Alpha EEG Activities. (P)
- Riera J**, Wan X, Kawashima R. A first-order bottom-up approach at the micro-columnar level. (P)
62. **Second International Workshop on Evolutionary Cognitive Sciences**. Komaba, Tokyo, July 2nd-3rd, 2005.
- Brain activation associated with the sentence processing: An fMRI study. Naho Ikuta, Motoaki Sugiura, Yuko Sassa, Jobu Watanabe, Yuko Akitsuki, Kazuki Iwata, Naoki Miura, Hideyuki Okamoto, **Jorge Riera**, Shigeru Sato, Kaoru Horie, Yoshihiko Matsue, Ryuta Kawashima. (P)
 - Brain activities related to the integration of nouns and numeral classifiers in Japanese: An ERP study. Yumi Sakai, Kazuki Iwata, **Jorge Riera**, Xiaohong Wan, Satoru Yokoyama, Yoshiteru Shimoda, Ryuta Kawashima, Kei Yoshimoto, Masatoshi Koizumi. (P)

- Neural network involved in verb processing: An fMRI study. Satoru Yokoyama, Tadao Miyamoto, Jungho Kim, Yuko Akitsuki, **Jorge Riera**, Kei Yoshimoto, Kaoru Horie, Shigeru Sato, Ryuta Kawashima. (P)
63. **The 5th International Symposium on Future Medical Engineering based on Bio-nanotechnology**. 21st Century Center of Excellence (COE) Program, Sendai, Japan, 2005.
- Wan X, **Riera J**, Iwata K, Watanabe J, Kitamura M, Kawashima R. The correlation of concurrent fMRI and EEG with visual stimuli in humans. (P)
64. 平成17年度生理研研究会「神経科学の道具としての機能的MR I 研究会」. Okazaki, Japan, 2005.
- Nonlinear Local Electro-Vascular Coupling. **Riera J**, Wan X, Jimenez JC, Kawashima R. (O)
 - Spontaneous and event related correlates of concurrent EEG and fMRI. Wan X, **Riera J**, Kawashima R. (P)
65. **The 4th International Forum on Language, Brain, and Cognition: Cognition, Brain, and Typology: Towards a Synthesis**, Sendai, Japan, September 2004.
- The role of linguistic typology in sentence comprehension by multilinguals: An fMRI study. Jeong H, Iwata K, Watanabe J, Sassa Y, Akitsuki Y, Ikuta N, Okamoto H, Yokoyama S, Miura N, **Riera J**, Haji T, Usui N, Taira M, Sato S, Kawashima R. (P)
66. **10th Annual Meeting of the Organization of Human Brain Mapping**. Budapest, Hungary, June 13th-27th, 2004.
- A bottom-up approach for fMRI and NIRs fusion. I- Theory. **Riera J.**, Iwata K., Jimenez J.C., Ozaki T., Kawashima R. (P)
 - A bottom-up approach for fMRI and NIRs fusion. II- Application to real data. K. Iwata, **J. Riera**, R. Kawashima. (P)
 - fMRI activation maps based on the NN-ARX model. **Riera J.**, Bosch J., Yamashita O., Kawashima R., Sadato N., Ozaki T. (P)
 - A de-blurring method to remove the effect of nuisance tissues from NIRs signals. **Riera J.**, Ripoll J., Kawashima R. (P)
 - An event-related fMRI study of how active and passive sentences are comprehended in Japanese. Yokoyama S, Nakamura W, Watanabe J, Sassa Y, Iwata K, Akitsuki Y, Miura N, Jeong H, Ikuta N, **Riera J**, Okamoto H, Usui N, Taira M, Sato S, Horie K, Kawashima R. (P)
 - An fMRI study of reading of ancient writings. Miura N, Watanabe J, Iwata K, Sassa Y, **Riera J**, Tsuchiya H, Takahashi M, Kitamura M, Kawashima R. (P)
 - fMRI Evidence for the Neural Correlates of the Typological Differences among L1, L2, and L3. Jeong H, Iwata K, Watanabe J, Sassa Y, Akitsuki Y, Ikuta N, Miura N, Okamoto H, Yokoyama S, **Riera J**, Haji T, Usui N, Taira M, Horie K, Sato S, Kawashima R. (P)
 - Changes in the activation pattern during the course of sentence comprehension. Ikuta N, Iwata K, Sassa Y, Watanabe J, Akitsuki Y, Miura N, Okamoto H, Riera J, Sato S, Matsue Y, Kawashima R. (P)
 - Innovation approach to extracting connectivity information from fMRI time series. Andreas Galka, Tohru Ozaki, Jorge Bosch-Bayard, Okito Yamashita, **Jorge Riera-Diaz**, Norihiro Sadato. (P)
67. 言語処理学会第10回年次大会. 東京, Japan, 2004.
- 横山悟、渡辺丈夫、佐々祐子、岩田一樹、三浦直樹、秋月祐子、鄭嬌婷、生田奈穂、ホルヘ・リエラ、岡本英行、土師知己、臼井信男、泰羅雅登、中村渉、佐藤滋、堀江薫、川島隆太：受動文の理解における脳内での処理の負荷。
68. 第27回日本神経科学大会. 大阪, 2004.9.
- 鄭嬌婷、岩田一樹、渡辺丈夫、佐々祐子、生田奈穂、秋月祐子、三浦直樹、岡本

- 英行、横山悟、**Jorge Riera**、土師知己、臼井信男、泰羅雅登、佐藤滋、川島隆太:L1、L2及びL3間の言語学的類似性と関連する神経機構。
- 岩田一樹、**Jorge Riera**、川島隆太：fMRIおよびNIRSデータの融合：ボトムアップアプローチに基づく動的モデル。
69. 平成16年度生理研研究会「神経科学の道具としての機能的MRI研究会」.
機能的磁気共鳴画像法（機能的MRI）の技術的ならびに生理学的な諸課題について議論・情報交換をおこなう。開催日平成16年11月25日(木)～26日（金）. SEIRIKEN KENKYUKAI, Okazaki, Japan, 2004.
- Fusing EEG and fMRI based on a bottom-up model: Inferring activation and effective connectivity in neural masses. **Riera J.**, Aubert E., Iwata K., Kawashima R., Wan X., Ozaki T. (O)
70. **9th Annual Meeting of the Organization of Human Brain Mapping.** NY, USA, 2003.
- Realistic head shape surfaces using spherical splines. **J. Riera**, V. Poghosyan, A. Ioannides. (P)
 - A method to estimate neuronal dynamic from BOLD signals. **J. Riera**, J. Watanabe, K. Iwata, N. Miura, E. Aubert, R. Kawashima. (P)
 - Brain Activation Related to Spatial Divided Attention - an fMRI study. K. Iwata, M. Sugiura, J. Watanabe, **J. Riera**, Y. Akitsuki, Y. Sassa, Y. Watanabe, N. Miura, N. Ikuta, H. Okamoto, Y. Maeda, Y. Matsue, R. Kawashima. (P)
 - An fMRI study of reading aloud. N. Miura, K. Iwata, J. Watanabe, M. Sugiura, Y. Akitsuki, Y. Sassa, N. Ikuta, H. Okamoto, Y. Watanabe, **J. Riera**, Y. Maeda, Y. Matsue, R. Kawashima. (P)
71. 世紀の診断工学とその周辺. Diagnosis Engineering in 21st Century and Some other Fields. The Institute of Statistical Mathematics (ISM), Tokyo, Japan, September 25th, 2002.
- A natural RKHS formulation of the EEG/MEG forward and inverse problems in the sphere. **J.J. Riera**, P. Valdés and K. Tanabe. (O)
72. **8th Annual Meeting of the Organization of Human Brain Mapping.** Sendai, Japan, 2002.
- A RKHS formulation of the EEG/MEG inverse problem in the sphere. **Riera J.**, Valdes P., Tanabe K. (P)
 - Alpha Rhythm Source Activation and Connectivity. **Riera J.**, Valdés P., Aubert E., Evans A., Worsley K. (P)
73. 第2回感性福祉学会. 仙台, Japan, 2002.
- 岩田一樹, 杉浦元亮, 渡邊丈夫, **Jorge Riera**, 三浦直樹, 秋月祐子, 佐々祐子, 渡部芳彦, 生田奈穂, 岡本英行, 前田泰弘, 松江克彦, 川島隆太: 視覚的注意の効率的配分に関係する脳領域
74. **IV International Workshop on Wavelets, Quantization and Partial Differential Equations.** Havana, Cuba, May 7-11, 2001.
- Properties of the Electric and Magnetic Lead Fields: toward a unified Spline Inverse Solution. **Jorge J. Riera**, Pedro A. Valdés, Kunio Tanabe. (O)
75. **7th Annual Meeting of the Organization of Human Brain Mapping.** Brighton, UK, June 10th-14th, 2001.
- An analysis of brain sources and connectivity patterns associated with alpha rhythm reactivation in human. **Riera J.**, Valdes P., Aubert E., Evans A., Worley K. (P)
76. **Mathematical Methods in Biology and Medicine. Theme Year 2000-2001.** Workshop on Mathematical Methods in Brain Mapping. Centre De Recherches Mathematiques (Org. Keith Worsley, McGill University). Montreal, Canada, 2000.

- Workshop on Mathematical Methods in Brain Mapping. December 10-11, 2000. Org. Keith Worsley (McGill University). A Natural RKHS formulation of the EEG/MEG forward and inverse problems. **Jorge Riera**
- Courses and Seminars. Techniques in Brain Mapping. Mathematical Methods for EEG/MEG and their Fusion with other Imaging Modalities, Org. Keith Worsley, Bernard Goulard, Universite De Montreal, 5th-8th, 2000
77. **12th International Conference on Biomagnetism**. Helsinki, Finland, August 13-17, 2000.
- Properties of the Electric and Magnetic Lead Fields in a spherical Head Model. **Riera J.**, Valdes P. (P: Riera)
78. **International Symposium for Neurological Restoration**. Havana, Cuba, 1999.
- qEEG on statistic Cortical Atlas. **Riera J**; Valdés P; Bosch J; Biscay R; Aubert E. (O)
79. **Satellite Symposium to the 5th Conference on Functional Mapping of the Human Brain**. Dusseldorf, Germany, 1999.
- Spatio-temporal Modeling for Discrete and Distributed Solutions. P. Valdes, **J. Riera**, N. Trujillo, L. Melie. (O)
80. **VI Congreso Latinoamericano de Neuropsicología**. Varadero, Cuba, October 17th-20th, 1999.
- BEETLES: Sistema para el Ajuste de los Generadores de Potenciales Relacionados a Evento (ERP) Asociados a Procesos Cognitivos. Macías F, Bosch J, **Riera J**, Trujillo N, Valdés-Sosa P, Martí-López F. (P)
 - Solución del Problema Inverso del EEG/MEG vía EM. Nelson J. Trujillo Barreto, Pedro A. Valdés Sosa, Lester Melie García, **Jorge J. Riera Díaz**. (P)
 - Estudio de los Generadores Eléctricos de Potenciales Relacionados a Eventos Basado en un Atlas Estadístico Cortical. **J. Riera**, P. Valdés, Harmony T. and E. Aubert. (P)
81. **Basic and Clinical Neurosciences: "A dialogue with Latin America" (US-CUBA Neuromeeting)**. Havana, Cuba, October 19th-23rd, 1999.
- Brain Electric Tomography. **Jorge J. Riera**; Eduardo Aubert, Pedro A. Valdés (O)
82. **4th International Conference on Functional Mapping of the Human Brain**. Montreal, Canada, 1998.
- Electric Field induced inside a Sphere due to Radial Single Coil Magnetic Stimulation. Díaz D., Martínez J.M., **Riera J.** (P)
 - Constraining EEG-MEG Source Imaging with Statistical Neuroanatomy. Valdés P., Picton T., Trujillo N., Bosch J., Aubert E., **Riera J.**, Biscay R., Carbonell F., Barroso E., Fernández A. and Evans A. (O)
83. **11th International Conference on Biomagnetism**. Sendai, Japan, 1998
- Magnetic Lead Field for a Piecewise Homogeneous Volume Conductor Model of the Head. **Riera J.J.**, Díaz D., Martínez J.M. (P)
 - Electric Field induced inside a Sphere due to Radial Single Coil Magnetic Stimulation. Martínez J.M., Díaz D., **Riera J.J.** (P)
 - A Theoretical Comparison of the EEG and MEG Signatures involved in solving the Brain Electric Current Inverse Problem. **Riera J.J.**, Díaz D., Martínez J.M. (P)
84. **8th International Congress on Brain Electromagnetic Topography**. Zurich, Switzerland, 1997.
- The statistical analysis of distributed inverse solutions. P. Valdés, K. Worsley, **J. Riera**, J. Bosch, R. Casanova. (O)
 - Usefulness of an average brain atlas in electric brain atlas in electric brain tomography. R. Casanova, **J. Riera**, T. Harmony, E. Barroso, A. Fernández-Bouza, E. Aubert, W. Korin, A. Evans, P. Valdés. (P)
 - The origin of the alpha rhythm. **J. Riera**, E. Aubert, R. Casanova, J. Bosch, R. Biscay, P. Valdés. (P)

85. **24th Conference on Stochastic Processes and Their Applications SPA24.** Villa del Mar, Chile, 1997.
- The local linearization method for stochastic differential equations: properties and applications. R. Biscay, J.C. Jiménez, T. Ozaki, **J. Riera**, P. Valdés. (O)
86. **World Congress on Medical Physics and Biomedical Engineering.** Nice, France, 1997.
- Electric Lead Field for a piece-wise homogeneous volume conductor model of the head. **Riera J.**, Fuentes M.E. (P)
 - EEG inverse solutions for spherical head model. **Riera J.**, Ohárriz Y., Fuentes M.E., Valdés P. (P)
87. **Noninvasive Functional Source Imaging.** Graz, Austria, 1997.
- Solving the Forward Problem: Spherical vs. Realistic Electric Lead Field. **J. Riera**, M.E. Fuentes, E. Aubert, D. Díaz. (P)
 - Theoretical Basis of the EEG Spline Inverse Solutions for a Spherical Head Model. **J. Riera**, M.E. Fuentes, P. Valdés, Y. Ohárriz. (P)
 - Explicit Backus and Gilbert EEG Inverse Solution for Spherical Symmetry. **J. Riera**, P. Valdés, M.E. Fuentes and Y. Ohárriz. (P)
 - Piece-wise homogeneous volume conductor models of the head. **Riera J.**, Fuentes M.E. (O).
88. **El V Congreso Latinoamericano de Neuropsicología.** Gualdarajara, México, 1997.
- Simposium: Métodos de Imágenes Electromagnéticas en Neuropsicología. Tomografía Electromagnética: Soluciones inversas distribuidas espaciotemporales. Valdés P., **Riera J.**, Casanova R. (O)
89. **Tenth International Conference on Biomagnetism.** Biomag96. Santa Fe, USA, 1996.
- Mixed Inverse Solutions with Stochastic Generators. Valdés P., **Riera J.**, Casanova R., Martí F., García F., Bosch J., Lins O. (O)
90. **7th International Congress on Brain Electromagnetic Topography.** Rio de Janeiro, Brazil, 1996.
- Tomographic QEEG, Valdés P., Casanova R., **Riera J.** (O)
91. **Fourth IBRO World Congress of Neurosciences.** Kyoto, Japan, 1995.
- Nonlinear identification of ionic currents by using intracellular voltage recordings. **Riera J.J.**, Soto E., Valdés P., Jiménez J., Biscay R., Hernández J.L., Oropesa Edgar. (P)
92. **6th International Congress of the International Society for Brain Electromagnetic Topography.** Tokushima, Japan, 1995.
- Mixed distributed and discrete electromagnetic brain tomography. **Riera J.**, Valdés P., Aubert E., Jiménez J.C., Casanova R. (P)
93. **5th International Congress of the International Society for Brain Electromagnetic Topography.** Munster, Germany, 1994.
- Oscillatory Brain Dynamics II. Nonlinear analysis of the EEG based on neural models. Valdés P., **Riera J.**, Jiménez J.C., Biscay R. (O)
 - Stability and bifurcations of a simplified simulated thalamo-cortical loop. Menéndez de la Prida L., **Riera J.**, Valdés P. (P)
 - Human visual induced gamma band responses measured by EEG. Müller M.M., Valdés P., Bosch J., **Riera J.**, Bobes M.A. (P)
94. **Fourth International Symposium of the International Society for Brain Electromagnetic Topography.** Havana, Cuba, 1993.
- Estimating Cortical Activity from the EEG and Anatomical/Functional Constraints. Valdés P., **Riera J.**, Bosch J., Hernández J. L., Aubert E. (O).

- Source Analysis in the Frequency Domain. **Riera J.**, Valdes P., Biscay R., Grave de Peralta R., Bosch J. (O).
 - Influence of Neuronal Membrane Intrinsic Properties on Neural Mass Model. **Riera J.**, Menéndez L., Valdés P., Valdés J.L. (P)
 - Nonlinear models of EEG. Forum Discussion (Chairman: T. Elbert), Lopes da Silva F., **Riera J.**, Menéndez L. Hernández J.L., Lehmann D., Elbert T. (O)
 - Frequency Domain Sources on an Average Cortical Surface. **Riera J.**, Bosch J., Valdés P., Biscay R., Aubert E. (P)
95. **XIII International Congress of Electroencephalography and Clinical Neurophysiology.** Vancouver, Canada, August 29-September 4, 1993.
- Nonlinear Quantitative EEG analysis. Valdés P., Hernández J.L., Biscay R., Grave de Peralta R., González A. Valdés J.L., **Riera J.** (O)
96. **9th International Conference on Biomagnetism.** Vienna, Austria, 1993. Round Table Discussion on Modeling. (Williamson S.J., Ioannides A.A., Lutkenhöner B. Mosher J.C. Wang J.Z., Valdés P.)
- Sources on the Frequency Domain. Valdés P., **Riera J.**, Grave de Peralta R., Bosch J., Biscay R. (O)
97. **The Round Table on the Development of Neurosciences in the Caribbean.** Havana, Cuba, 1993.
- Frequency Domain Model on an Average MRI. **J. Riera**, P. Valdés. (O)
98. **Second Symposium on the Development of Mathematics.** Cuban Academy of Sciences, Havana, Cuba, 1992.
- Maximum Likelihood and Least Square Estimators of Nuisance Parameters. **Riera J.**, Carballo J., Biscay R., Valdés P. (O)
99. **The International fifth Swiss EEG-EP Mapping Meeting.** Zurich, Switzerland, 1992.
- On the Use of Higher Order Moments for Source Localization. **Riera J.**, Bosch J., Valdés P., Bobes M., Riquenes A., Castellanos M. (P)
100. **EPIC X. Tenth International Conference on Event Related Potentials of the Brain.** Eger, Hungary, 1992.
- Event Related Incongruence Components: Source Analysis in the Frequency Domain. Valdés P., **Riera J.**, Bosch J., Bobes M. (O)
 - On the Use of Higher Order Moments for Source Localization. **Riera J.**, Bosch J., Valdés P., Bobes M., Riquenes A., Castellanos M. (P)
101. **III International Congress on Brain Electromagnetic Topography.** Amsterdam, Holland, 1992.
- Coherences in a Model for Alpha Rhythm: EEG and MEG data. **Riera J.**, Bosch J., Valdés P., Riquenes A. (P)
 - A Stochastic Source Model for Event Related Potentials. **Riera J.**, Bosch J., Valdés P., Riquenes A. (P)
 - EEG Source Norms. Bosch J., Valdés P., **Riera J.**, Aubert E., Virues T., Riquenes A. (P)
102. **The Second International Congress on Brain Electromagnetic Topography.** Toronto, Canada, July 29th-August 1st, 1991.
- Frequency Domain Models of the EEG. Valdés P., Bosch J., Grave R., Hernández J., **Riera J.**, Pascual R. and Biscay R. Symposium: Advances in EEG. (O)
 - The Genesis of EEG Spatial Principal Components. Valdés P., **Riera J.**, Báez O. (P)
103. **Vth International Congress of Psychophysiology.** Budapest, Hungary, August, 1990.
- ERP Components Estimation. **Riera J.**, Carballo J., Biscay R., Valdés P. (P)

104. **1st Latinamerican Conference of Mathematics Applied to Biology.** Havana Cuba, October 31st-November 3rd, 1990.
- Orthogonal Modes of Oscillation. A Model of the Electrical Activity Generation in the Brain. **Riera J.** (P)
 - Detections of EPs. **Riera J.**, Carballo J.A., Valdés P. (P)
 - Likelihood estimation of EPs latency. **Riera J.**, Carballo J.A., Valdés P. (P)
105. **International Conference on Advanced Methods in Neurosciences.** "Neurosciences 89". Havana, Cuba, 1989.
- Natural Categories During Ontogeny: Relevance for the Structure of Semantic Memory. Morenza L., Torres R., Chivas F., **Riera J.**, Lara I., Biscay R., Galan L., Santaya M., Castellanos B. (O)
106. **INIFUNCE.** Second Scientific Meeting. Havana, Cuba, 1986.
- Implications for neurons of different variations of the mechanisms involved in regulating intracellular Ca²⁺. **Riera J.**, Hernández J.L., Castellanos M. (P)

CREATIVE WORK

(List date and type of work and/or place of presentation. If the creative work has received recognition, such as design award, competition prize, exhibition or publication by others, or critical review, indicate the level of recognition as well as the peer-review context and process.)

N/A

WORKS IN PROGRESS

Papers submitted to journals for consideration (Note: Students and *Postdoc Fellows* in my lab)

1. Abhay Deshmukh, Jared Lechner, *Jihye Bae*, Yinchen Song, Wei-Chiang Lin, **Jorge Riera**. Histological characterization of IED-generating brain regions using a preclinical model of FCD. *Frontiers in Cellular Biology*, submitted, 2017.
2. Daniel E. Rivera, Arash Moshkforoush, Darlene Ramos, Yoichiro Mori, **Jorge Riera**. Revisiting CSD propagation characteristics with microelectrode arrays: from field potentials to spiking. *Cerebral Cortex*, submitted, 2017.
3. Arash Moshkforoush, Daniel Rivera, *Pedro Valdes Hernandez*, Yoichiro Mori, **Jorge Riera**. A method for estimating transmembrane currents originated from neuronal activity propagation in the neocortex: Application to study the spreading depression. *Journal of Neurophysiology*, submitted, 2017.

Other completed papers

1. Lakshmi Balachandar, Diana Borrego, Jeremy Chambers, **Jorge Riera**. Evaluating best AAV serotypes for in vivo light-based intervention of brain astrocytes. *Glia*, preparation, 2017.
2. *Pedro Valdes Hernandez*, Arash Moshkforoush, **Jorge Riera**. Three biophysical models for the negative BOLD response: a method to discriminate them. *NeuroImage*, preparation, 2017.
3. *Pedro Valdes Hernandez*, Divya Teltumbade, Patrick Henry, Byron Benal, **Jorge Riera**. Alterations in the default mode networks of epileptic patients with focal cortical dysplasia: from microstates to fMRI resting states. *Epilepsia*, preparation, 2017.
4. Diego C. Estumano, Helcio RB Orlande, Marcelo J Colaço, Carlos Cepeda, **Jorge Riera**. Characterization of calcium dynamics in cytomegalic neurons: implication for epileptogenesis in FCD. *PLoS Computational Biology*, preparation, 2017.

Research in Progress

Information is available from our laboratory website (<https://nmd.fiu.edu/>)

- **Optogenetic stimulation of astrocytes to control neuroinflammatory process.** Collaboration with the Herbert Wertheim College of Medicine (Jeremy Chambers), FIU
- **EEG-fMRI data fusion for localizing ictal-onset zones in epileptic patients.** Collaborations with the Nicklaus Children Hospital (Byron Bernal) and the University of Miami (Andres Kanner)
- **Understanding dysregulation in the neurovascular coupling in epilepsy.** Collaborations with the University of Reading (Ying Zheng), Yale University (Fahmeed Hyder) and the department of BME (Wei-Chiang Lin and Anuradha Godavarty), FIU
- **Development of video-games for intervention on children with ASD.** Collaborations with Autism-U (Aleida Lanza and Deborah Safko) and the Affective Social Computing Laboratory (Christine Lisetti), SCIS, FIU
- **Modeling the cortical microcircuits underlying epileptogenesis and cortical spreading depression.** Collaboration with UCLA (Carlos Cepeda), the University of Minnesota (Yoichiro Mori) and the department of BME (Nikolaos Tsoukias), FIU
- **Visual event-related potentials and oscillations in monkeys and humans.** Collaboration with Vanderbilt University (Jeffrey Schall and Geoffrey F. Woodman)

Grant Proposals (list title of project, agency receiving proposal, and date of submission)

PI: Jorge Riera

Co-I: Wei Chaing Lin (0.3 Sum, BME, Florida International University)

Co-I: Fahmeed Hyder (0.6 Cal, Yale University)

Co-I: Basavaraju S Ganganna (1.2 Cal, Yale University)

Co-I: Byron Bernal (0.15 Cal, Nicklaus Children Hospital)

Title: Novel Method for classifying BOLD deactivation mechanisms in focal epilepsy

Organization: National Institutes of Health

Research Project: Grant (Parent R01) PA-13-302

Research Period: January 2018- December 2022

Total amount: \$2,969,862

Submitted: July 28th, 2017

Pending IRG Review 09/2017

PI: Geoffrey F. Woodman

Co-I: Jeffrey Schall

Co-I: Jorge Riera (FIU Subcontract)

Title: Comparative electrophysiology: Visual event-related potentials and oscillations

Organization: National Institutes of Health

Research Project: NEI RO1 renewal (3 R01 EY019882-05)

Research Period: 2018-2023

Total amount (FIU subcontract only): \$186,474.60

Submitted: July 5th, 2017

Pending IRG Review 09/2017

PI: Jorge Riera

Title: Acquisition of a 9.4 Tesla BioSpec 94/20 USR

Organization: National Institutes of Health

Research Project: 1S10OD023619-01A1

Research Period: 2018

Total amount: \$2,000,000

Submitted: May 31st, 2017

Pending IRG Review 12/2017

PI: Jorge Riera

Title: Noninvasive intra-laminar current source density discriminator based on concurrent EEG and MEG multichannel data

Organization: National Institutes of Health

Research Project: 1R01EB022712-01

Research Period: 2016-2019

Total amount: \$988,850.00

FOA Title: BRAIN Initiative: Theories, Models and Methods for Analysis of Complex Data from the Brain (R01)

Resubmission Process

FUNDED RESEARCH

(List all investigators, title of project, funding agency [if the funding is a subcontract, from what organization], project dates, and amount of funding [when there are co-PIs on an award, give the portion of the total award coming to the candidate]).

PI: Jorge Riera (0.67, Summer)

Co-I: Fahmeed Hyder, Yale University (0.6 Cal) – subcontract

Co-I: Basavaraju Ganganna, Yale University (1.2 Cal) – subcontract

Title: Novel method for classifying BOLD response mechanisms in focal epilepsy

Organization: National Institute of Health

Program: R01 Bridge Grant# 1R56NS094784-01A1

Research Period: August 2016 - July 2018

Total amount: \$315,503.00

PI: Jorge Riera (0.33, Summer)

Title: Collaborative Research: Cortical Spreading Depression (CSD) and Ionic Electro-diffusion in the Brain

Organization: National Science Foundation

Program: NSF - DMS 1517176

Research Period: August 2015 - July 2018

Total amount: \$165,000.00

Note: This proposal is in Collaboration with NSF-1516978 (PI: Yoichiro Mori, University of Minnesota-Twin Cities)

PI: Madhavan Nair (20%, CY)

Co-I: Jorge Riera (10%, AY)

Co-I: Chenzhong Li (10%, AY)

Co-I: Sudheesh Kanthikeel (25%, CY)

Co-I: Hong Ding (25%, CY)

Co-I: Upal Roy (25%, CY)

Title: Multifunctional Nanocarrier to Eradicate HIV from latently infected CNS cells and to treat Meth addiction

Organization: National Institute of Health

Program: R01-Grant # 1R01DA037838-01

Research Period: 2014 - 2019

Total amount: \$1,812,500.00

PI: Jorge Riera

Title: Optogenetic-based therapy to control seizure perpetuation in type II FCD epileptic rats

Organization: Wallace Coulter Foundation

Program: BME Seed Grant

Research Period: May 2017 - April 2018

Amount: \$30,000

Funded Proposals (Japan)

PI: Jorge Riera

Title: Develop of an auditory cortical implant by using 3D current stimulation with feed-back control

Organization: Japan Society for the Promotion of Science (JSPS)

JSPS Grant-in-Aid (B) 23300149

Program: KIBAN KENKYU (B)

Research Period: 2011-2013 (2012 - *discontinued*)

Total amount: 16,950,000 yens (\$210,000.00)

PI: Jorge Riera

Title: 小動物用の脳測定用電極ユニットとそれを用いた測定装置

Organization: Japan Science and Technology (JST)

Program: PCT Patent Application (S2010-0620-N0)

Research Period: January 2011 - December 2011

Total amount: 500,000 yens (\$5,800.00)

PI: Jorge Riera

Title: a) 麻酔下ラットにおける自発的脳活動のイメージング, b) ラットにおける脳活動の確立微分代数ダイナミカルモデリング, c) EEG/ERPの神経解剖学的決定要因

Organization: IDAC, Tohoku University

Program: Internal Supportive Funding

Research Period: 2008 - 2009

Total amount: 1,300,000 yens (\$15,000.00)

PI: Jorge Riera

Co-PI: Alan Evans (Montreal Neurological Institute, McGill University)

Title: The neuroarchitectonic determinants of EEG recordings

Organization: Japan Society for the Promotion of Science (JSPS)

JSPS Grant-in-Aid (B) 18320062

Program: Japan-Canada Join Health Research Program, Canadian Inst. of Health Research (CIHR)

Research Period: 2008 - 2010

Total amount: \$88,000.00 (4,100,000 yens (\$45,000.00) + 60,000 CDN (\$43,000.00))

PI: Tadao Miyamoto

Co-I: Jorge Riera (15% AY)

Title: Brain activation during comprehension of Japanese words and sentences

Organization: Japan Society for the Promotion of Science (JSPS)

Program: KIBAN KENKYU (B)

Research Period: 2007 - 2009

Total amount: 11,927,000 yens (**\$131,000.00**)

PI: Jorge Riera

Title: A state-space model of the hemodynamic approach: non-linear filtering of BOLD signals in fMRI

Organization: Telecommunications Advancement Organization (TAO)

Program: R&D promotion scheme for regional proposals, Japan

Research Period: 2002 - 2003

Total amount: 4,300,000 yens (**\$48,000.00**)

PI: Jorge Riera

Title: The developing of mathematical methods to study deep brain sources from MEG single trials.

Organization: Brain Science Institute, RIKEN, Japan

Research Period: 1999 - 2000

Total amount: 2,500,000 yens (**\$27,000.00**)

PROPOSALS SUBMITTED BUT NOT FUNDED

(List title of project, funding agency, project dates, and amount of requested funding)

PI: Jorge Riera

Title: An auditory neuroprosthetic system with biofeedback and adaptive learning

Organization: National Institutes of Health

Research Project: 1R01DC014738-01

Research Period: 2015 - 2018

Total amount: \$ 1,383,335.00

Administratively Withdrawn by IC (03/01/2017)

PI: Jorge Riera

Co-I: Fahmeed Hyder (0.24 p/months, Yale University)

Co-I: Basavaraju S Ganganna (0.36 p/months, Yale University)

Title: Neural basis of fMRI deactivations in focal epilepsy: a preclinical evaluation

Organization: National Institutes of Health

Research Project: 1R15NS088908-01

Research Period: 2013 - 2016

Total amount: \$390,247.00

Administratively Withdrawn by IC (03/01/2016)

PI: Jorge Riera

Co-I: Wei-Chiang Lin (0.18 Academic & 0.3 Summer)

Title: Alterations in the neurovascular coupling and cortical circuit around FCD lesions

Organization: National Institutes of Health

Research Project: 1R01NS084058-01

Research Period: 2011 - 2014

Total amount: \$1,393,080.58

Administratively Withdrawn by IC (07/01/2015)

PI: Jorge Riera

Co-I: Wei-Chiang Lin (0.18 Academic & 0.6 Summer)

Title: Optogenetic-based therapy to control seizure perpetuation in type II FCD epileptic rats

Organization: National Science Foundation

CBET - BIOPHOTONICS, IMAGING & SENSING PD 13-7236

Research Period: 2013 - 2016

Total amount: \$589,538.00

Director: Jorge Riera

Co-I: Steven Bressler (Florida Atlantic University)

Co-I: Jon P Dobson (University of Florida)

Co-I: Delia Cabrera DeBuc (University of Miami)

Title: Florida Center for Computational Biophysics

Organization: National Science Foundation

PHY - PHYSICS FRONTIER CENTER NSF 13-559

Research Period: 2014 - 2019

Total amount: \$10,713,529.00

PATENT DISCLOSURES, APPLICATIONS, AND AWARDS

1. Electroencephalographic electrode unit for small animals and measurement system using same. **Riera J**, Sumiyoshi A, Kawashima R., US No. 9,078,584 B2, 2015.
2. System and Methods for the tomography of the primary electric current of the brain and the heart. Valdés P, **Riera J**, Bosch J, Aubert E, Virue T, Morales F, Trujillo N, Fuentes ME, Soler J., US No. 7,092,748 B2, 2002.
3. Method and system for the three dimensional tomography of activity and connectivity of brain and heart electromagnetic waves generators. Valdés P, **Riera J**, Bosch J, Biscay R, González S, Grave de Peralta R, Pascual R., US No. 5,307,807, 1992.

PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS

(Note: Students and Postdoc Fellows in my lab)

Department

- **First prize:** BME Graduate Research Day 2013. Yinchen Song
- **First prize:** BME Graduate Research Day 2014. Lakshmini Balachandar

School/College

N/A

University

- **FIU Provost Award** for Best TA, Arash Moshkforoush, 2017
- Graduate Student Appreciation Week (GSAW), Oral Presentation, College of Engineering and Computing, 2017 - **First Prize:** Lakshmini Balachandar
- **McNair Award:** Daniel Rivera, Cohort 2017
- **FIU BRI Research Award**, Lakshmini Balachandar, 2016
- **McNair Award:** Josue Santana, Cohort 2015
- Graduate Student Appreciation Week (GSAW), Oral Presentation, College of Engineering and Computing, 2014 - **First Prize:** Yinchen Song
- Human Brain Mapping Organization, Hamburg, 2014 - **Travel Award:** Yinchen Song

- BRAIN Grand Challenge Conference, Washington DC, 2014 - **Young Investigator Award:**
Yinchen Song

Previous honors, prizes & fellowships

Prize: Student Data Blitz - The 3rd ISN Special Neurochemistry Conference. 8th International Meeting on Brain Energy Metabolism-“Neurodegeneration and Regeneration”, Beijing, China, June 27-July 1, 2008.

Best Paper Finalist Award - APSIPA Annual Summit and Conference, December 14 - 17, 2010, Biopolis, Singapore.

1st Award “Statistical Methods to compare Topographics and Tomographics Maps of the Brain Electrical Activity”, Cuban Academy of Sciences, Havana, Cuba, 2000.

Most Original Research - Statistical Identification of the Nonlinear Brain Dynamic in Normal and Epileptic Subjects. Ministry of Superior Education and Cuban Academy of Sciences, Havana, Cuba, 1999.

1st Award - Statistic 3D dimensional Map of the Spectrum of the EEG generators. Cuban Academy of Sciences, Havana, Cuba, 1997. *Special Recognition:* Ministry of Science, Technology and Environment, Cuba (CITMA).

Junior Fellowship - Fourth International Brain Research Organization (IBRO), World Congress of Neuroscience, Kyoto, Japan, 1995.

Junior Associate Fellowship - International Centre for Theoretical Physics (ICTP), Trieste, Italy. (Period: 1995-1998).

1st Award - Brain Electromagnetic Tomography: a High Resolution Method. Scientific Board of the Cuban National Forum for Science and Technology, 1993.

1st Award - Frequency Domain Models for the EEG. Cuban Academy of Sciences, Havana, Cuba, 1992.

Silver Medal - 1st Cuban Mathematics, Physics and Chemistry Olympic Games, Havana, Cuba, 1985.

OFFICES HELD IN PROFESSIONAL SOCIETIES

Professional Societies

1. International Federation of Medical and Biological Eng. (*IFMBE NeuroEngineering Working Group*)
2. IEEE Society (1998-2000 and 2015-present). **Regular Member**
3. Human Brain Mapping Organization (2002-Present). **Regular Member**
4. American Physiological Society (2006-Present). **Regular Member**
5. Society for Neuroscience (2012-Present). **Regular Member**
6. ISTAART Alzheimer's Association (2012-Present). **Regular Member**
7. Brain Connectivity Workshop Series (2006-Present). **Scientific Board**
8. Biomedical Engineering Society (2013-Present). **Regular Member**
9. Member of the Scientific Advisory Board - Human Brain Project (2013-present). **Speaker**
10. National Academy of Investors (2012-present). **Chapter Member**

OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

FIU Services

- Institutional Animal Care and Use Committees (IACUC) committee (2013-Present)
- Biomedical Engineering Society (BMES) – Faculty Advisor (2013-Present)

- AHC Aging Initiative Steering Committee (2013-Present)
- Organizer: Wallace-Coulter Seminar Series (2012-2013)
- Faculty Fellow: The Honor College (2016-Present)
- Faculty Member: Herbert Wertheim College of Medicine (2013-Present)
- STEM Transformation Institute's Founding Faculty Fellows (2015-Present)
- Award Committee College of Engineering and Computing (2015-Present)
- Center for Imaging Science (CIS) Steering Committee (2016-Present)
- Member of Graduate Program Committee, Dept. Biomedical Engineering (2013-Present)
- Advanced Research and Creativity program (ARCH) Mentor, Honors College (2014-Present)
- FIU Control Substance Committee (CSC) (2013-Present)
- Liaison: Association of Cuban-American Engineers and FIU (2014-Present)
- Mentor - FIU Faculty Mentor Program (FMP) (2015-2016)

Grant Reviewer

Permanent Member: BMIT-B NIH Study Section (Biomedical Imaging Technology-B) (July 1st, 2017-June 30th, 2021)

Temporal Member: NIH ANIE Study Section and Special Emphasis Panel (BDCN)

External Reviewer: Natural Sciences and Engineering Research Council of Canada (2010-Present)

1502 - Biological Systems and Functions
CRSNG – Canada

External Reviewer: King Abdullah University of Science and Technology (KAUST) Competitive Research Grants (CRG) program (2009-Present)
Office of Competitive Research Funds (OCRF), Saudi Arabia

External Reviewer: International Research Grant Program, US, Alzheimer's Association (2010-Present)

<http://www.alz.org/>

External Reviewer: Agence Nationale de la Recherche (ANR)
<https://aap.agencerecherche.fr>

Participant: NIH Focus Group with New and Early Stage Investigators (2014)

Editorial Service

- Journal of Integrative Neuroscience. Associate Editor (Neuroimaging) (2010-2013)
- Frontiers in Neuroscience
 - Associate Editor (“Brain Imaging Methods” section) (2012-Present)
 - Frontiers in Neuroscience (Neuroenergetics) - Review Editor
 - Frontiers in Neuroscience (Neuroinformatics) - Review Editor
- PLoS ONE - Editorial Board
- Austin Journal of Biomedical Engineering – Editorial Board

Regular Journal Reviewer: NeuroImage, PLoS Computational Biology, Journal of Computational and Applied Mathematics, Journal of Neurophysiology, Neural Computation, Cerebral Cortex, The Journal of Neuroscience, Journal of Theoretical Biology, Brain Connectivity, IEEE Transactions in Biomedical Engineering, Brain Research, Epilepsia, Philosophical Trans Royal Soc B.