

**Javier Gonzalez-Castillo, Ph.D.**  
**Senior Associate Scientist, National Institute of Mental Health, NIH**  
Washington Metro Area, USA  
javiergcas@gmail.com

## EDUCATION

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- 2009            Ph.D., Biomedical Engineering, **Purdue University**, West Lafayette, IN, USA.
- 2001            BS. & MS., Electrical and Computer Engineering, **Universidad Politécnica de Madrid**, Madrid, Spain.

## RESEARCH EXPERIENCE

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- 2021-  
Present        *Senior Associate Scientist*  
Section on Functional Imaging Methods, National Institute of Mental Health,  
**National Institutes of Health**, Bethesda, MD.
- 2014-2021    *Staff Scientist*  
Section on Functional Imaging Methods, National Institute of Mental Health,  
**National Institutes of Health**, Bethesda, MD.
- 2011-2014    *Research Fellow*  
Section on Functional Imaging Methods, National Institute of Mental Health,  
**National Institutes of Health**, Bethesda, MD.
- 2009-2011    *Post-doctoral Visiting Fellow*  
Section on Functional Imaging Methods, National Institute of Mental Health,  
**National Institutes of Health**, Bethesda, MD.

## TEACHING EXPERIENCE

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- 2014-  
Present        *Guest Lecturer at the NIH fMRI Summer Course*  
National Institute of Mental Health, Bethesda, MD
- 2008            *Graduate Course Instructor*  
Weldon School of Biomedical Engineering, Purdue University, West Lafayette
- (BME501) Medical Device Accidents and Engineering Analysis
- 2005-2007    *Teaching Assistant*  
Weldon School of Biomedical Engineering, Purdue University, West Lafayette
- (BME501) Medical Device Accidents and Engineering Analysis
  - (ECE528) Measurement and Stimulation of the Nervous System

## INDUSTRY EXPERIENCE

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- 2001-2004     *Associate Consultant*  
**Hewlett Packard Consulting & Integration**, Hewlett-Packard, Madrid, Spain
- Project manager for medium size projects (\$50,000-\$100,000).
  - Prepare commercial proposals on IT management solutions.
  - Manage communication with HP R&D business unit.
- 2000-2001     *Research Engineer*  
**Hewlett Packard Labs**, Hewlett-Packard, Bristol, UK
- Research Semantic Web Technologies and applications to e-commerce.

## MENTORSHIP EXPERIENCE

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- Post-  
Doctoral  
Fellows     Somayeh Shahsavarani – NIH & Columbia University (2020 – Present)
- Ph.D.  
Students     Xia Hue – Texas Tech University, Lubbock, TX (2017 – 2018)  
Sara Kimmich – NIH/University College of London, London, UK (2017)  
Samika Kuman – NIH/University of Cambridge, Cambridge, UK (2020-Present)
- NIH Post-  
bac Fellows     Megan Spurney (2021-Present), Isabel Fernandez (2020 – 2022), Ramya  
Varadarajan (2019 – 2020), Michel Elishama (2018 – 2019), Natasha Topolski  
(2016 - 2018), Puja Panwar (2016), Laura Buchanan (2014 – 2015), Colin Hoy  
(2013 - 2014), Kristen Duthie (2011).
- NIH  
Summer  
Students     James Brown (2016), Devon Shook (2013), Meghan Robinson (2011)

## HONORS AND DISTINCTIONS

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- 2021     *NIMH Outstanding Mentor Award*
- 2019     *NIMH Director's Award in Administrative Excellence*
- 2009     *Bilsland Dissertation Fellowship, Purdue University*
- 2009     *Magoon Award for Excellence in Teaching, Purdue University*
- 2008     *Magoon Award for Excellence in Teaching, Purdue University*
- 2004-2005     ***Fulbright Fellowship***

## PROFESSIONAL MEMBERSHIPS

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2012-2019	<i>Society for Neuroscience (sfn)</i>
2011-2019	<i>International Society for Resonance Magnetic Imaging in Medicine (ISMRM)</i>
2011-Present	<i>Organization for Human Brain Mapping (OHBM)</i>

## **HONORARY SOCIETY MEMBERSHIPS**

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2008-Present	<i>Tau Beta Pi, Engineering Honor Society</i>
2008-Present	<i>Golden Key, International Honor Society</i>

## **GRANTS**

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2019 - 2020	<u><i>NIMH Scientific Director's call for Scientific Workshops and Talk Series</i></u> "Talk Series on Machine Learning in Brain Imaging and Neuroscience" Support: \$20,000
2018 - 2019	<u><i>NIMH Scientific Director's call for Scientific Workshops and Talk Series</i></u> "Talk Series on Machine Learning in Brain Imaging and Neuroscience" Support: \$20,000
2017 - 2018	<u><i>NIMH Scientific Director's call for Scientific Workshops and Talk Series</i></u> "Talk Series on Machine Learning in Brain Imaging and Neuroscience" Support: \$20,000

## **PROFESSIONAL/LEADERSHIP ACTIVITIES**

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2022	<u><i>Ad-hoc Reviewer for the National Science Foundation</i></u>
2016 - Present	<u><i>NeuroImage Editorial Board Member</i></u>
2020 - Present	<u><i>Editorial Board Member for Frontiers in Brain Imaging Methods</i></u>
2015 - Present	<u><i>Machine Learning-Brain Imaging Special Interest Group Organizer</i></u> National Institute of Mental Health Selected Speakers: Dr. Tulay Adali (University of Maryland), Dr. Joshua Vogelstein (John Hopkins University), Dr. Mikail Rubinov (Janelia Farm), Yoshua Bengio (Montreal University), Dr. Niko Kriegeskorte (Columbia University).
2020	<u><i>Ad-hoc Reviewer for the Israel Science Foundation</i></u> Joint NSFC-ISF Research Program
2020	<u><i>Topic Editor for Research Topic in Frontiers in Brain Imaging Methods</i></u>

- Title: “Paradigm-free functional brain imaging: methods, challenges and opportunities”
- 2019 Topic Editor for Research Topic in Frontiers in Human Neuroscience  
Title: “Towards expanded utility of real time fMRI neurofeedback in clinical applications”
- 2019 Ad-hoc Reviewer for the Israel Science Foundation  
Personal Research Grant Program
- 2018-2019 Heliyon Editorial Board Member
- 2018 Symposium Chair  
The Dynamic Brain: signatures of fast functional reconfiguration, their interpretability and clinical value  
48<sup>th</sup> Annual Meeting for the Society for Neuroscience, San Diego, CA
- 2017 Local Chair/Organizer for Brainhack Global @ NIMH  
Two-day Brainhack event held on NIH campus. Projects included: fMRI data denoising, fMRI-based neurofeedback, ME-ICA reporting, AFNI-AROMA integration, and creation of course materials.
- 2015 Grant Review Panelist  
National Science Foundation (NSF) & National Institutes of Health (NIH)  
Panel: Collaborative Research in Computational Neuroscience
- 2014 Grant Review Panelist  
Army Research Lab (ARL)  
Panel: Cognition and Neuroergonomics Collaborative Technology Alliance.
- 2012-2020 Abstract Reviewer  
Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM)
- 2009-2020 Abstract Reviewer  
Annual Meeting of the Organization for Human Brain Mapping (OHBM)
- 2009-Present Scientific Journal Reviewer  
PNAS, Journal of Neuroscience, NeuroImage, Human Brain Mapping, Magnetic Resonance in Medicine, IEEE Transactions in Biomedical Engineering, Frontiers in Neuroscience, Frontiers in Brain Imaging Methods, Artificial Intelligence in Medicine, Neuroscience Letters, Cognitive Neuroscience, Neuroscience Research, SPIE Journal of Medical Imaging, Brain Structure and Function.
- 2019-Present Mentor at the National Research Mentoring Network  
Mentees: Dr. Serenella Tolomeo

## BOOK CHAPTERS

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- [1] Malaia E, **Gonzalez-Castillo J**, Webber-Fox C, Talavage TM, Wilbur B. Neuronal processing of verbal event structure: temporal and functional dissociation between telic and atelic verbs. In: de Almeida RG, Manouilidou C, eds. Cognitive science perspectives on verb representation and processing. Cham: Springer International Publishing; **2015**:131–140.
- [2] Talavage TM, Johnsrude IS, **Gonzalez-Castillo J**. Hemodynamic Imaging: Functional Magnetic Resonance Imaging. In: Poeppel D, Overath T, Popper AN, Fay RR, eds. The Human Auditory Cortex. Vol 43. Springer Handbook of Auditory Research. New York, NY: Springer New York; **2012**:129–162.

## PUBLICATIONS

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- [1] Uruñuela E, **Gonzalez-Castillo J**, Caballero-Gaudes C. “Multivariate multi-echo PFM” (In preparation)
- [2] Gonzalez-Castillo J, Fernandez IS, Lam KC, Handwerker DA, Pereira F, Bandettini PA “Manifold learning for fMRI time-varying FC” (In preparation)
- [3] Bandettini PA, **Gonzalez-Castillo J**, Handwerker DA, Taylor P, Chen G, Thomas A. “The challenge of BWAS: Unknown unknowns in feature space and variance” (Under review) Neuron.
- [4] **Gonzalez-Castillo J**. “Traveling and Standing waves in the brain” (In Press) Nature Neuroscience (2022)
- [5] **Gonzalez-Castillo J**, Fernandez I, Handwerker DA, Bandettini PA. “Ultra-slow fMRI fluctuations in the fourth ventricle as a marker of drowsiness” Under Review (NeuroImage)
- [6] Gau R, Noble S, Heuer K, et al. “Brainhack: developing a culture of open, inclusive, community-driven neuroscience” Neuron, **2021**:109(11),1769-1775
- [7] **Gonzalez-Castillo J**, Kam JWY, Hoy CW, Bandettini PA. “How to interpret resting-state fMRI: ask your participants” *Journal of Neuroscience*, **2020**:41(6), 1130-1141
- [8] **Gonzalez-Castillo J**, Ramot M, Momenan R. “Towards Expanded Utility of Real Time fMRI Neurofeedback in Clinical Applications” Frontiers in Human Neuroscience, **2020**; 14, 471
- [9] Rolinski R, You X, **Gonzalez-Castillo J**, Norato G, Reynolds RC, Inati SK, Theodore WH. “Language lateralization from task-based and resting-state functional MRI in patients with epilepsy”. *Human Brain Mapping*, **2020**; 41(11), 3133-3146

- [10] Handwerker DA, Ianni G, Gutierrez B, Roopchansingh V, **Gonzalez-Castillo J**, Chen G, Bandettini PA, Ungerleider LG, Pitcher D. "Theta-burst TMS to the posterior superior temporal sulcus decreases resting-state fMRI connectivity across the face processing network". *Network Neuroscience*, **2020**; 4(3), 746-760
- [11] **Gonzalez-Castillo J**, Caballero-Gaudes C, Topolski N, Handwerker DA, Pereira F, Bandettini PA. "Imaging the spontaneous flow of thought: distinct periods of cognition contribute to dynamic functional connectivity during rest". *NeuroImage*, **2019**; 202, 116129
- [12] Chai Y, Handwerker DA, Marrett S, **Gonzalez-Castillo J**, Merriam EP, Hall A, Molfese PJ, Bandettini PA. "Visual temporal frequency shows a distinct cortical architecture using fMRI" *NeuroImage*, **2019**; 197, 13-23
- [13] Caballero-Gaudes C, Moia S, Panwar PA, Bandettini PA, **Gonzalez-Castillo J**. "A deconvolution algorithm for multi-echo functional MRI: multi-echo sparse paradigm free mapping" *NeuroImage*, **2019**; 202, 116081
- [14] Xie H, Zheng CY, Handwerker DA, Bandettini PA, Calhoun VD, Mitra S, **Gonzalez-Castillo J**. "Efficacy of different dynamic functional connectivity methods to capture cognitively relevant information". *NeuroImage*, **2019**; 188, 502-514
- [15] Ramot M, **Gonzalez-Castillo J**. "A framework for offline evaluation and optimization of real-time algorithms for use in neurofeedback, demonstrated on an instantaneous proxy for correlations" *NeuroImage*, **2019**; 188, 322-334
- [16] Xie H, **Gonzalez-Castillo J**, Damaraju E, Bandettini PA, Calhoun V, Mitra S. "Time-varying whole-brain functional network connectivity coupled to task engagement" *Network Neuroscience* **2018**; 3(1):49-66
- [17] **Gonzalez-Castillo J**, Bandettini PA. "Task-based dynamic connectivity: recent findings and open questions" *NeuroImage*, **2018**; 180, 526-533
- [18] Xie H, Calhoun V, **Gonzalez-Castillo J**, Damaraju E, Miller R, Bandettini PA, Mitra S. "Whole-brain connectivity dynamics reflect both task-specific and individual-specific modulation: a multitask study". *NeuroImage*, **2018**; 180 (Part B), 495-504
- [19] Sagar M, Sporns O, **Gonzalez-Castillo J**, Bandettini PA, Carlsson G, Glover G, Reiss AL. "Towards a new approach to reveal dynamical organization of the brain using topological data analysis". *Nature Communications*, **2018**; 9(1):1399
- [20] Jangraw DC, **Gonzalez-Castillo J**, Handwerker DA, Ghane M, Rosenberg M, Panwar P, Bandettini PA. "A Functional Connectivity-based neuromarker of Sustained Attention Generalizes to Predict Recall in Naturalistic Reading Task" *NeuroImage* **2018**; 166:99-109
- [21] Torrisi S, Gorka AX, **Gonzalez-Castillo J**, O'Connell K, Balderston N, Grillon C, Ernst M. "Extended amygdala connectivity changes during sustained shock anticipation" *Translational Psychiatry* **2018**; 8(1):33

- [22] Huber L, Handwerker D, Jangraw D, Hall H, Stuber C, **Gonzalez-Castillo J**, Ivanov D, Marrett S, Guidi M, Goense J, Poser BA, Bandettini PA. “High-Resolution CBV-fMRI allows mapping of laminar activity and connectivity of cortical input and output in human M1” *Neuron* **2017**; 96(6):1253-1263.e7
- [23] Ramot M, Kimmich S, **Gonzalez-Castillo J**, Roopchansingh V, Popal H, White E, Gotts S, Martin A. “Direct modulation of aberrant brain network connectivity through real-time neurofeedback” *eLife* **2017**; 6:e28974
- [24] **Gonzalez-Castillo J**, Gang C, Nichols T, Cox B, Bandettini PA. “Variance Decomposition for multi-session fMRI”. *NeuroImage*, Special Issue on “Cleaning up the fMRI timeseries” *NeuroImage* **2017**; 154: 206-218
- [25] Degryse J, Seurinck R, Durnez J, **Gonzalez-Castillo J**, Bandettini PA, Moerkerke B. “Introducing alternative-based thresholding for defining functional regions of interest in fMRI” *Front. Neurosci.* **2017**; 11:222
- [26] Craddock RC, Bellec P, Margules DS, Nichols BN, Pfannmöller JP, Badhwar AP, Kennedy D, Poline JB, Toro R, Cipollini B, Rokem A et al. “2015 Brainhack Proceedings” *GigaScience* **2016**; 5(1): 1 – 26
- [27] **Gonzalez-Castillo J**, Caballero Guades C, Panwar P, Buchanan LC, Handwerker DA, Jangraw DC, Zachariou V, Bandettini PA. “Evaluation of Multi-Echo ICA denoising for task based fMRI studies: block designs, rapid event-related designs, and cardiac-gated fMRI”. *NeuroImage* **2016**; 141: 452-468.
- [28] **Gonzalez-Castillo J**, Hoy CW, Handwerker D, Robinson ME, Buchanan LC, Saad ZS, Bandettini PA. “Tracking ongoing in individuals using brief, whole-brain functional connectivity patterns”. *Proc Natl Acad Sci U S A.* **2015**; 112(28): 8762-8767
- [29] **Gonzalez-Castillo J**, Bandettini PA. “What cascade spreading models can tell us about the brain”. *Neuron.* **2015**; 86(6): 1327-1329
- [30] **Gonzalez-Castillo J**, Hoy CW, Handwerker DA, et al. “Task Dependence, Tissue Specificity, and Spatial Distribution of Widespread Activations in Large Single-Subject Functional MRI Datasets at 7T”. *Cereb Cortex.* **2015**; 25(12): 4667-4677
- [31] Yang Z, Huang Z, **Gonzalez-Castillo J**, Dai R, Northoff G, Bandettini PA. “Using fMRI to decode true thoughts independent of intention to conceal”. *NeuroImage.* **2014**; 99: 80–92.
- [32] **Gonzalez-Castillo J**, Handwerker DA, Robinson ME, et al. “The spatial structure of resting state connectivity stability on the scale of minutes”. *Front Neurosci.* **2014**; 8(June): 138
- [33] Talavage TM, **Gonzalez-Castillo J**, Scott SK. “Auditory neuroimaging with fMRI and PET”. *Hear Res.* **2014**; 307: 4–15.

- [34] Smalt CJ, **Gonzalez-Castillo J**, Talavage TM, Pisoni DB, Svirsky MA. "Neural correlates of adaptation in normal hearing subjects to free learning with cochlear implant acoustic simulations". *NeuroImage*. **2013**; 82: 500-509
- [35] Hutchison RM, Womelsdorf T, Allen EA, Bandettini PA, Calhoun VD, Corbetta M, Della Penna, S, Dyun, JH, Glover GH, **Gonzalez-Castillo J**, et al. "Dynamic functional connectivity: Promise, issues, and interpretations". *NeuroImage*. **2013**; 80: 360–378.
- [36] Bandettini PA, Kundu P, **Gonzalez-Castillo J**, Misaki M, Guillod P. "Characterizing and utilizing fMRI fluctuations, patterns, and dynamics." In: Weaver JB, Molthen RC, eds. *SPIE Medical Imaging. International Society for Optics and Photonics*; **2013**: 86720T
- [37] **Gonzalez-Castillo J**, Duthie KN, Saad ZS, Chu C, Bandettini PA, Luh W-M. "Effects of image contrast on functional MRI image registration". *NeuroImage*. **2012**; 67: 163–174.
- [38] Handwerker DA, Roopchansingh V, **Gonzalez-Castillo J**, Bandettini PA. "Periodic changes in fMRI connectivity". *NeuroImage*. **2012**; 63(3): 1712–9.
- [39] Handwerker DA, **Gonzalez-Castillo J**, D'Esposito M, Bandettini PA. "The continuing challenge of understanding and modeling hemodynamic variation in fMRI". *NeuroImage*. **2012**; 62(2): 1017–1023.
- [40] **Gonzalez-Castillo J**, Saad ZS, Handwerker DA, Inati SJ, Brenowitz N, Bandettini PA. "Whole-brain, time-locked activation with simple tasks revealed using massive averaging and model-free analysis". *Proc Natl Acad Sci U S A*. **2012**; 109(14): 5487–92
- [41] **Gonzalez-Castillo J**, Olulade OA, Talavage TM. "Using functional MRI to study auditory comprehension". *Imaging Med*. **2012**; 4(1): 137–143
- [42] Olulade O, Hu S, **Gonzalez-Castillo J**, et al. "Assessment of temporal state-dependent interactions between auditory fMRI responses to desired and undesired acoustic sources". *Hear Res*. **2011**; 277(1-2): 67–77.
- [43] Soltysik DA, Thomasson D, Rajan S, **Gonzalez-Castillo J**, DiCamillo P, Biassou N. "Head-repositioning does not reduce the reproducibility of fMRI activation in a block-design motor task". *NeuroImage*. **2011**; 56(3): 1329–37.
- [44] **Gonzalez-Castillo J**, Roopchansingh V, Bandettini PA, Bodurka J. "Physiological noise effects on the flip angle selection in BOLD fMRI". *NeuroImage*. **2011**; 54(4): 2764–2778.
- [45] **Gonzalez-Castillo J**, Talavage TM. "Reproducibility of fMRI activations associated with auditory sentence comprehension". *NeuroImage*. **2011**; 54(3): 2138–2155.
- [46] Hu S, Olulade O, **Gonzalez-Castillo J**, et al. "Modeling hemodynamic responses in auditory cortex at 1.5T using variable duration imaging acoustic noise". *NeuroImage*. **2010**; 49(4): 3027–3038.



[47] Kemmerer D, **Gonzalez-Castillo J**. “The Two-Level Theory of verb meaning: An approach to integrating the semantics of action with the mirror neuron system”. *Brain Lang.* **2010**; 112(1): 54–76.

[48] Kemmerer D, **Gonzalez-Castillo J**, Talavage T, Patterson S, Wiley C. “Neuroanatomical distribution of five semantic components of verbs: Evidence from fMRI”. *Brain Lang.* **2008**; 107(1): 16–43.

[49] **Gonzalez-Castillo J**, Trastour D, Bartolini C. “Description Logics for Matchmaking of Services”. In: *KI-2001 Workshop on Applications of Description Logics*, Vienna, Austria. **2001**

[50] Trastour D, Bartolini C, **Gonzalez-Castillo J**. “Semantic Web Approach to Service Description for Matchmaking of Services”. In: *Semantic Web Workshop*, Stanford USA. **2001**

## **CONFERENCE ARTICLES**

[1] Caballero-Gaudes C, Moia S, Bandettini, PA, **Gonzalez-Castillo J**. Quantitative deconvolution of fMRI data with multi-echo sparse paradigm free mapping. 21<sup>st</sup> International Conference on Medical Imaging Computing and Computer Assisted Intervention (MICCAI), Granada, Spain, **2018**, 311-319

[2] Caballero Guades C, Bandettini PA, **Gonzalez-Castillo J**. A temporal deconvolution algorithm for multiecho functional MRI. *IEEE International Symposium on Biomedical Engineering (ISBI)*, Washington DC, **2018**, 608-611.

## **PRESENTATIONS**

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### **Oral Presentations**

[1] Gonzalez-Castillo J. “What to do when stimuli are missing: advanced methods for time-varying resting-state fMRI” Neuroscape Center, University of California, San Francisco, CA. July **2022**.

[2] Gonzalez-Castillo J. “Sources of individual differences in resting-state fMRI” *NIMH Workshop on Neuroimaging of Individual Differences and Naturalistic Stimuli*, virtual, August, **2021**

[3] Gonzalez-Castillo J. “Cognitive correlates of BOLD Resting-state dynamic functional connectivity” *Scientific Workshop: Brain Functional Organization, Connectivity and Behavior*, Whistler, CA, March, **2020**

[4] Gonzalez-Castillo J. “Periods of discernible cognition contribute to dynamic functional connectivity during rest” *27<sup>th</sup> Annual Meeting of the Society for Magnetic Resonance Imaging in Medicine*, Montreal, May, **2019**.

- [5] Gonzalez-Castillo J. "Quantitative deconvolution of neuronal-related BOLD events with multi-echo sparse free paradigm mapping" *26<sup>th</sup> Annual Meeting of the Society for Magnetic Resonance Imaging in Medicine*, Paris, June, **2018**.
- [6] Xie H, Gonzalez-Castillo J. "Efficacy of different functional connectivity methods to capture cognitively relevant information" *26<sup>th</sup> Annual Meeting of the Society for Magnetic Resonance Imaging in Medicine*, Paris, June, **2018**.
- [7] Gonzalez-Castillo J. "Machine Learning in NeuroImaging" *NIH fMRI Summer Course, National Institutes of Health*, Bethesda, MD. August, **2017**.
- [8] Gonzalez-Castillo, J. "Unconventional fMRI Methodology: multi-echo fMRI, connectivity dynamics, and fMRI-neurofeedback". *Centro Integral de Neurociencias, Hospital de Madrid*, Madrid, Spain. December, **2016**.
- [9] Gonzalez-Castillo, J. Alternative analyses for task-based fMRI. *24<sup>th</sup> Annual Meeting of the Society for Magnetic Resonance Imaging in Medicine*, Singapore. May, **2016**.
- [10] Gonzalez-Castillo, J. Wide-spread brain activation and connectivity dynamics with BOLD fMRI *Indiana University*, Bloomington, IN. April, **2016**.
- [11] Gonzalez-Castillo, J. Wide-spread brain activation and connectivity dynamics with BOLD fMRI, *Texas Tech University*, Lubbock, TX. March, **2016**.
- [12] Gonzalez-Castillo, J. Multi-echo EPI for resting state and activation-based fMRI, *Texas Tech NeuroImaging Institute*, Lubbock, TX. March, **2016**.
- [13] Gonzalez-Castillo, J. The richness of the BOLD signal: Challenges and Opportunities. *Cincinnati Children's Hospital*, Cincinnati, OH. March, **2016**.
- [14] Gonzalez-Castillo, J. Wide-spread brain activation and functional connectivity decoding with BOLD fMRI, *National Library of Medicine*, Bethesda, MD. February, **2016**.
- [15] Gonzalez-Castillo J. Multi-echo EPI for resting state and activation based fMRI, *NIH fMRI Summer Course, National Institutes of Health*, Bethesda, MD. August, **2015**.
- [16] Gonzalez-Castillo J. Dynamic Resting State fMRI Assessment, *NIH fMRI Summer Course, National Institutes of Health*, Bethesda, MD. August, **2015**.
- [17] Gonzalez-Castillo J. fMRI-based functional connectivity: Issues and Applications. *Georgetown University*, Washington, DC. August, **2015**.
- [18] Gonzalez-Castillo J. Wide-spread brain activation with BOLD fMRI. *Max Planck Institute*, Leipzig, Germany. July, **2015**.
- [19] Gonzalez-Castillo J. Optimizing fMRI data acquisition and analysis. *Basque Center for Brain and Cognition*, San Sebastian, Spain. July, **2015**.

- [20] Gonzalez-Castillo J. Realtime fMRI and Neurofeedback at the NIH fMRI Summer Course, National Institutes of Health, Bethesda, MD. August, **2014**.
- [21] Gonzalez-Castillo J. BOLD resting state dynamics and its relationship to on-going cognition. *1<sup>st</sup> International Conference on Brain Development*, Beijing, China. August, **2014**.
- [22] Gonzalez-Castillo J. Resting State Connectivity Dynamics: Basic Characterization and Relationship to Cognition. *National Institutes of Health*, Bethesda, MD. August **2013**.
- [23] Gonzalez-Castillo J. Understanding Resting State fMRI Connectivity Dynamics. *National Institute of Drug Abuse*, Baltimore, MD. July **2013**.
- [24] Gonzalez-Castillo J. When does a task disturb rest? *19<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping*, Seattle, WA. June **2013**.
- [25] Gonzalez-Castillo J. Optimization of acquisition and analysis procedures for BOLD temporal series. *Fundación Centro Investigación Enfermedades Neurológicas (CIEN)*, Reina Sofia Alzheimer's Research Center, Madrid, Spain. January **2013**.
- [26] Gonzalez-Castillo J. Is the sparseness of fMRI activation maps real or a result of insufficient TSNR? *Institute of Psychology, Chinese Academy of Sciences*, Beijing, China. June **2012**.
- [27] Gonzalez-Castillo J. What is the ultimate sensitivity of fMRI: Does the whole brain activate? *20<sup>th</sup> Annual Meeting for the International Society of Magnetic Resonance in Medicine*. Melbourne, Australia. May **2012**.
- [28] Gonzalez-Castillo J. fMRI reveals whole-brain time-locked activations to simple tasks using high-order averaging and model-free analysis *John Hopkins University*, Baltimore, MD. April **2012**.
- [29] Gonzalez-Castillo J. Dealing with physiological noise, TSNR, and how to easily improve alignment of fMRI and anatomical data. *West Virginia University*, Morgantown, WV. April **2012**.
- [30] Gonzalez-Castillo J. Realtime fMRI and fMRI Neurofeedback. *West Virginia University*, Morgantown, WV. April **2012**.
- [31] Gonzalez-Castillo J. What is the ultimate sensitivity of fMRI: Does the whole brain activate? *National Institute of Health*, fMRI/MRI Series, Bethesda, MD, **2011**.
- [32] Gonzalez-Castillo J. BOLD responses to a simple visual stimulation + attention control task can be detected in over 90% of the brain when TSNR is sufficiently high. *15<sup>th</sup> Annual NIMH/DIRP Scientific Retreat*, Lancaster, PA, **2011**.

[33] Gonzalez-Castillo J. Longitudinal fMRI Study of Adaptation to Degraded Speech Stimuli. *1<sup>st</sup> Indiana Neuroimaging Symposium*, Bloomington, IN, **2007**.

[34] Gonzalez-Castillo J. Event related fMRI of Adaptation to Acoustic Simulation of Cochlear Implant Electrical Stimulation. *29<sup>th</sup> Midwinter Meeting of the Association for Research in Otolaryngology*, Baltimore, MD, **2006**.

### **Poster Presentations**

[1] Shahsavarani S, Thibodeaux DN, Lodgher F, Xu W, Handwerker DA, **Gonzalez-Castillo J**, Bandettini PA, Hillman EMC. "Varying patterns of brain-wide neuronal activity underlie correlation structure of low-frequency spontaneous hemodynamic signals". *51<sup>st</sup> Annual Meeting of the Society for Neuroscience*, San Diego, CA, USA, November **2022**.

[2] Spurney M, **Gonzalez-Castillo J**, Lam KC, Handwerker DA, Teeves JB, Pereira F, Bandettini PA. "How conscious in-scanner thoughts modulate functional connectivity during resting-state fMRI". *51<sup>st</sup> Annual Meeting of the Society for Neuroscience*, San Diego, CA, USA, November **2022**.

[3] **Gonzalez-Castillo J**, Spurney M, Lam KC, Handwerker DA, Teeves J, Pereira F, Bandettini PA. "How conscious thoughts during resting-state affect functional connectivity estimates". *28<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping*, Glasgow, Scotland, June **2022**.

[4] Markiewicz C, DuPre E, Esteban O, Goncalves M, Gonzalez-Castillo J, Handwerker DA, et al. "Standardizing support for multi-echo fMRI data across the NiPreps ecosystem". *28<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping*, Glasgow, Scotland, June **2022**.

[5] Kumar S, Arzi A, Bereham C, **Gonzalez-Castillo J**, Fernandez IS, Tagliazucchi E, Mediano P, Bandettini PA, Bekinschtein T. "Sleep-related brain functional reorganization reflects task engagement". *28<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping*, Glasgow, Scotland, June **2022**.

[6] Holness MN, Handwerker DA, Teeves JB, Moegan AT, **Gonzalez-Castillo J**, Bandettini PA. "Multi-echo fMRI denoising with physiological and motion information". *28<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping*, Glasgow, Scotland, June **2022**.

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