CURRICULUM VITAE

	Last updated: Apr 23 th , 2020	
Name	Center for Neuroscience Imaging Research, Institute for Basic Science	
Seok-Jun Hong, PhD	Department of Global Biomedical Engineering	
	Sungkyunkwan University, Suwon, South Korea	
	hongseokjun@skku.edu	
	Center for the Developing Brain	
	Child Mind Institute, New York, NY, USA	
	<u>sukjun.hong@childmind.org</u>	

A. Research keywords

Computational neuroimaging, Developmental disorders, biophysical brain network modeling

B. Education and Professionals

2020-Present	Assistant professor, Center for Neuroscience Imaging Research, Institute for Basic
	Science, Department of Global Biomedical Engineering, Sungkyunkwan University,
	Suwon, South Korea
2019-Present	Research Scientist in the Center for the Developing Brain, Child Mind Institute,
	New York, USA
2018-2019	Postdoc in the Center for the Developing Brain, Child Mind Institute, New York,
	USA (PI: Dr. Michael P. Milham; Project: Connectome-based brain biotyping and
	network simulation in neurodevelopmental disorders)
2017-2018	Postdoc in Multimodal Imaging and Connectivity Analysis Laboratory, Montreal
Neurological Institute, Canada (PI: Dr. Boris Bernhardt; Project: 1	
	studies of typical and atypical brain development)
2011-2016	<u>PhD in Integrated Program in Neuroscience</u> , McGill University, Canada.
	(Supervisor: Dr. Andrea Bernasconi; Thesis: Advanced multimodal imaging in
	epileptogenic malformations of cortical development)
2008-2010	MSc in Neuroscience, Seoul National University College of Natural Sciences,
	South Korea. (Supervisor: Dr. In Kyoon Lyoo; Thesis: Cerebellar deficits in
	opiate-dependent subjects: a voxel-based morphometric study)
2001-2007	BSc in Computer Science/Cognitive Science, Yonsei University, South Korea

C. Peer-reviewed journal, conference proceeding and book chapter

: 37 papers and 1 book chapter, 1049 citations in total, h-index=20, i10-index=23, 12 first author, 25 co-authors

- <u>Hong SJ</u>, Vogelstein J, Gozzi A, Bernhardt BC, Yeo B.T.T, Milham MP, Di Martino A, Towards Neurosubtypes in Autism. Biological Psychiatry 2020 (in press) [IF=11.50]
- Vos De Wael R, Benkarim O, Paquola C, Lariviere D, Royer J, Tavakol D, Xu T, <u>Hong SJ</u>, Langs G, Valk S, Misic B, Milham MP, Margulies D, Smallwood J, Bernhardt BC. BrainSpace: a toolbox for the analysis of macroscale gradients in neuroimaging and connectomics datasets. Communications biology 2020. 3 (1), 103
- Winston G, Vos SB, Caldairou B., <u>Hong SJ</u>, Czech M, Wood TC, Wastling SJ, Barker GJ, Bernhardt BC, Bernasconi N, Duncan JS, Bernasconi A. *Microstructural Imaging in Temporal Lobe Epilepsy: Diffusion Imaging Changes Relate to Reduced Neurite Density*. NeuroImage: Clinical. 2020 (in press) [IF=3.94]
- 4. Na HK, Lee HJ, <u>Hong SJ</u>, Lee DH, Kim KM, Lee HW, Heo K, Cho KH. Volume change in amygdala enlargement as a prognostic factor in patients with temporal lobe epilepsy: A longitudinal study. Epilepsia 2020. 61 (1), 70-80 [IF=5.07]
- Wandschneider B, <u>Hong SJ</u>, Bernhardt BC, Bernasconi A, Koepp M, Bernasconi N. Developmental neuroimaging markers co-segregate juvenile myoclonic epilepsy patients and unaffected siblings. Neurology. 2019 93 (13), e1272-e1280 [IF=8.67]
- Wang Z, Lariviere S, Xu Q, Vos de Wael R, <u>Hong SJ</u>, Wang Z, Xu Y, Zhu B, Bernasconi N, Bernasconi A, Zhang B, Zhang Z, Bernhardt BC. Community-informed connectomics of the thalamocortical system in generalized epilepsy. Neurology. 2019 (in press) [IF=8.67]
- 7. Paquola C, Vos De Wael R, Wagstyl K, Bethlehem RAI, <u>Hong SJ</u>, Seidlitz J, Bullmore ET, Evans AC, Misic B, Margulies DS, Smallwood J, Bernhardt BC. *Microstructural and functional gradients are increasingly dissociated in transmodal cortices*. Plos Biology (in press) [IF=8.39]
- Larivière S, Vos de Wael R, <u>Hong SJ</u>, Paquola C, Tavakol S, Lowe AJ, Schrader D, Bernhardt BC. *Multiscale Structure–Function Gradients in the Neonatal Connectome*. Cerebral Cortex. 2019 (in press) [IF=6.31]
- Hong SJ, Vos de Wael R, Bethlehem R, Lariviere R, Paquola C, Valk SL, Di Martino A, Milham MP, Smallwood J, Margulies D, Bernhardt BC. Atypical functional connectome hierarchy in autism. Nature Communication. 2019, 10 (1):1022 [IF=12.35]
- Hong SJ, Lee HM, Gill RS, Bernhardt BC, Bernasconi N, Bernasconi A. A connectome-based mechanistic model of epileptogenic focal cortical developmental malformations. Brain. 2019, 142 (3):688-699 (in press) [IF=10.84]
- II. <u>Hong SJ</u>, Hyung B, Paquola C, Bernhardt BC. The superficial white matter in autism and its role in connectivity anomalies and symptom severity. Cerebral Cortex. 2019 [Epub ahead of print] [IF=6.31]
- 12. Vos de Wael R, Larivière S, Caldairou B, <u>Hong SJ</u>, Margulies DS, Jefferies E, Bernasconi A, Smallwood J, Bernasconi N, and Bernhardt BC. *Anatomical and microstructural determinants of*

hippocampal subfield functional connectome embedding. Proceedings of the National Academy of Sciences. 2018, 115(40):10154-10159 [IF=9.5]

- 13. Adler S, Blackwood M, Northam GB, Gunny R, <u>Hong SJ</u>, Bernhardt BC, Bernasconi A, Bernasconi N, Jacques T, Tisdall M, Cross JH, Baldeweg T. *Multimodal computational neocortical anatomy in pediatric hippocampal sclerosis*. Annals of Clinical and Translational Neurology. 2018 5(10): 1200–1210. [IF=NA]
- 14. Gill RS, <u>Hong SJ</u>, Fadaie F, Caldairou B, Bernhardt BC, Barba C, Brandt A, Coelho VC, d'Incerti L, Lenge M, Semmelroch M, Bartolomei F, Cendes F, Deleo F, Guerrini R, Guye M, Jackson G, Schulze-Bonhage A, Mansi T, Bernasconi N, Bernasconi A. Deep Convolutional Networks for Automated Detection of Epileptogenic Brain Malformations. 21th MICCAI: International Conference on Medical Image Computing and Computer-Assisted Intervention, Granada, Spain, 2018 490-7. [IF=NA]
- 15. Lariviere S, Vos de Wael R, Paquola C, <u>Hong SJ</u>, Misic B, Bernasconi N, Bernasconi A, Bonilha L, Bernhardt BC. *Microstructure-informed connectomics: enriching large-scale descriptions of healthy and diseased brains*. Brain connectivity. 2018 [IF=NA]
- Adler S, <u>Hong SJ</u>, Liu M, Baldeweg T, Cross JH, Bernasconi A, Bernhardt BC, Bernasconi N. Topographic principles of cortical FLAIR signal in temporal lobe epilepsy. Epilepsia. 2018: 59:627-35 [IF=5.07]
- 17. <u>Hong SJ</u>, Valk SL, Di Martino A, Milham MP, Bernhardt BC. *Multidimensional neuroanatomical* subtyping of autism spectrum disorder. Cerebral Cortex. 2017: 1-11. [IF=6.31]
- Hong SJ, Bernhardt BC, Bernasconi N, Bernasconi A. The spectrum of structural and functional network alterations in malformations of cortical development. Brain. 2017, 140 (8):2133–43 (* selected as an Editor's Choice article and comments from Epilepsy research) [IF=10.84]
- 19. Gill RS, <u>Hong SJ</u>, Fadaie F, Caldairou B, Bernhardt BC, Bernasconi N, Bernasconi A. Automated detection of epileptogenic cortical malformations using multimodal MRI. 20th MICCAI Workshop: Deep Learning in Medical Image Analysis and Multimodal Learning for Clinical Decision Support, Canada. 2017. [IF=NA]
- Bernhardt BC, Fadaie F, Vos De Wael R, <u>Hong SJ</u>, Liu M, Guiot MC, Rudko DA, Bernasconi A, Bernasconi N. Preferential susceptibility of limbic cortices to microstructural damage in temporal lobe epilepsy: A quantitative T1 mapping study. Neuroimage. 2018 182:294-303 [IF=5.42]
- 21. <u>Hong SJ</u>, Bernhardt BC, Gill RS, Bernasconi N, Bernasconi A. Connectome-based pattern learning predicts histology and surgical outcome of epileptogenic malformations of cortical development. 20th International Conference on Medical Image Computing and Computer Assisted Interventions (MICCAI), Canada. 2017 (accepted; * selected for a travel award) [IF=NA]
- <u>Hong SJ</u>, Bernhardt BC, Caldairou B, Marie G, Hall J, Schrader D, Bernasconi N, Bernasconi A. *Multimodal profiling of focal cortical dysplasia type-II*. Neurology. 2017, 88:734-42 (* selected for cover page) [IF=7.61]

- 23. Liu M, Bernhardt BC, <u>Hong SJ</u>, Caldairou B, Bernasconi A, Bernasconi N. The superficial white matter in temporal lobe epilepsy: a key link between structural and functional network disruption. Brain. 2016 139: 2431-2440. [IF=10.84]
- 24. Bernhardt BC, Bernasconi A, Liu M, <u>Hong SJ</u>, Caldairou B; Goubran M, Marie G, Hall J, Bernasconi N. The spectrum of structural and functional imaging abnormalities in temporal lobe epilepsy. Annals of Neurology. 2016 80(1):142-53. [IF=10.24]
- 25. <u>Hong SJ</u>, Liu M, Bernasconi A. *Computational neuroanatomy of epilepsy*. Chapter 6, Book "Imaging biomarkers in epilepsy" (Cambridge University Press) 2017. [IF=NA]
- 26. Kulaga-Yoskovitz J, Bernhardt BC, <u>Hong SJ</u>, Mansi T, Liang K, Kouwe A, Smallwood J, Bernasconi A, Bernasconi B. Multi-contrast and submillimetric 3-Tesla hippocampal subregional segmentation protocol and data repository. Scientific data. 2015 doi:10.1038 [IF=4.84]
- <u>Hong SJ</u>[†], Bernhardt BC[†], Schrader D, Bernasconi N, Bernasconi A. Whole-brain MRI phenotyping in dysplasia-related frontal lobe epilepsy. Neurology. 2015, 86: 643-50 ([†] first co-author) [IF=7.61]
- Hong SJ, Bernhardt BC, Schrader D, Caldairou B, Bernasconi N, Bernasconi A. MRI-based lesion profiling of epileptogenic cortical malformations. 18th International Conference on MICCAI. 2015, LNCS 9350:501-510 (* Selected for 2015 student travel award) [IF=NA]
- 29. Bernhardt BC, <u>Hong SJ</u>, Bernasconi A, Bernasconi N. *MRI pattern learning in temporal lobe epilepsy: Classification and prognostics*. Annals of Neurology. 2015, 77(3):436-46. [IF=10.24]
- Bernhardt BC, Bernasconi N, <u>Hong SJ</u>, Dery S, Bernasconi A. Subregional mesiotemporal network topology is altered in temporal lobe epilepsy. Cerebral Cortex. 2015 26(7):3237-48. [IF=6.31]
- Kim HS, Caldairou B, Hwang JW, Mansi T, <u>Hong SJ</u>, Bernasconi N, Bernasconi A. Accurate cortical tissue classification on MRI by modeling cortical folding patterns. Human Brain Mapping. 2015, 36(9):3563-74. [IF=4.93]
- Hong SJ, Kim H, Schrader D, Bernasconi N, Bernhardt BC and Bernasconi A, Automated detection of cortical dysplasia type II in MRI-negative epilepsy. Neurology 2014, 83(1):48-55 [IF=7.61]
- Caciagli L, Bernhardt BC, <u>Hong SJ</u>, Bernasconi A, Bernasconi N. Functional network alteration and their structural substrate in drug-resistant epilepsy. Frontiers in Neuroscience. 2014, 8:411 [IF=3.88]
- 34. Bernhardt BC, <u>Hong SJ</u>, Bernasconi A and Bernasconi N, *Imaging structural and functional* brain networks in temporal lobe epilepsy. Frontier in Human Neuroscience. 2013, 7:624 [IF=2.87]
- 35. Voets NL, Beckmann CF, Cole DM, <u>Hong SJ</u>, Bernasconi A and Bernasconi N, Structural substrates for resting network disruption in temporal lobe epilepsy. Brain. 2012, 135:2350-7 [IF=10.84]

- 36. Kim HJ, Kim NK, Kim SH, <u>Hong SJ</u>, Park KM, Lim Sabina, Park JM, Na BJ, Chae YB, Lee JC, Yeo SJ, Choe IH, Cho SY, Cho KG, Sex difference in amygdala subregions: Evidence from subregional shape. Neuroimage. 2012, 60:2054-61 [IF=5.42]
- 37. Kim HJ, Kim JE, Cho G, Song IC, Bae S, <u>Hong SJ</u>, Yoon SJ, Lyoo IK, Kim TS, Associations between anterior cingulate cortex glutamate and gamma-aminobutyric acid concentrations and the harm avoidance temperament. Neuroscience Letters. 2009, 464:103-107 [IF=2.16]

D. Under review, preprint, in preparation

- <u>Hong SJ</u>[†], Xu T[†], Nikolaidis A, Smallwood J, Margulies DS, Bernhardt BC, Vogelstein J, Milham MP. *Toward a connectivity gradient-based framework for reproducible biomarker discovery*. bioRxiv († first co-author; preprint; under review) 2020. 10.1101/2020.04.15.043315
- 2. Kim SY, Liu M, <u>Hong SJ</u>, Toga AW, Barkovich J, Xu D, Kim H, Network-level structural covariance of cortical folding throughout neurodevelopment of preterm neonates with severe perinatal injuries (under review)
- 3. Xu T, Nenning K-H, Schwartz E, <u>Hong SJ</u>, Vogelstein J, Fair D, Smallwood J, Margulies DS, Schroeder C, Milham MP, Langs G, Cross-species functional alignment reveals evolutionary hierarchy within the connectome (preprint; under review) 2019. 10.1101/692616
- 4. Deleo F[†], <u>Hong SJ</u>[†], Bernhardt BC, Bernasconi N, Bernasconi A. Whole-brain multimodal MRI phenotyping of periventricular nodular heterotopia. († first co-author; minor revision)
- Dong D, Yao D, Wang Y, <u>Hong SJ</u>, Genon S, Xin F, Jung KS, He H, Chang X, Duan M, Bernhardt BC, Margulies DS, Sepulcre J, Eickhoff SB, Luo C. Altered Sensorimotor-to-Transmodal Hierarchical Organization in Schizophrenia (preprint; under review) 2020. 10.1101/2020.03.06.980607
- 6. Fadaie F, Lee HM, Caldairou B, Gill R, Bernhardt BC, <u>Hong SJ</u>, Bernasconi A, Bernasconi N Connectome-based mapping of altered functional hierarchy in temporal lobe epilepsy. (in preparation)
- 7. Lee HM, Gill R, Fadaie F, Caldairou B, Bernhardt BC, <u>Hong SJ</u>, Bernasconi N, Bernasconi A Structural variation within and across Type-II focal cortical dysplasias. (in preparation)
- 8. <u>Hong SJ</u>, Lee HM, Gill RS, Bernhardt BC, Bernasconi N, Bernasconi A. Focal cortical dysplasia: relation between lesion topography, sulcal root and genetic expression. (in preparation)
- 9. <u>Hong SJ</u>, Lee HM, Fadaie F, Gill RS, Bernhardt BC, Bernasconi N, Bernasconi A. *Translating* the Vogt-Vogt myeloarchitectonic map to the 3D cortical surface in the human brain. (in preparation)
- Hong SJ, Wang Y, Vos de Wael R, Park BY, Paquola C, Bethlehem R, Milham MP, Di Martino A, Bernhardt BC. Cognitive imbalances in autism differentially affect macroscale and microcircuit brain organization. (in preparation)
- 11. <u>Hong SJ</u>, Sisk L, Caballero C, Mekhanik A, Roy AK, Milham MP, Gee DG. Cross-modal integration and decomposition of the complex relationships between the environment and brain development in school-aged youth. (in preparation)

E. Honors, awards and grant

2019	NARSAD Young Investigator award, Brain-Behavior Research Foundation ($(0.000 _{\text{USD}})$
2018	Young Investigator Award, 72 nd American Epilepsy Society, USA (\$1,200 _{USD})
2018	Canadian Institutes of Health Research, Postdoc Fellowship (\$50,000 $_{CAD} imes 3ys$)
2018	Simon Groom Travel Award, Montreal Neurological Institute (\$1,000 _{CAD})
2017	Jeanne Timmins Fellowship, Montreal Neurological Institute (\$40,000 $_{CAD} imes 2ys$)
2017	Travel award, 20 th International Conference on MICCAI (\$1000 _{CAD})
2017	Canadian League Against Epilepsy, Post-Graduate Training Fellowship (\$65,000 _{CAD})
2017	Organization for Human Brain Mapping, Merit Abstract Award, Canada ($$2,000$ _{CAD})
2016	American Epilepsy Society, Jack Pellock Award, Houston, USA (\$1,500 USD)
2016	Top trainee in Canadian League Against Epilepsy, Canada (\$1000 _{CAD})
2015	Jeanne Timmins Costello Studentship, Montreal Neurological Institute (\$10,000 _{CAD})
2015	Canadian League Against Epilepsy, Publication award for student (\$1000 _{CAD})
2015	Student travel award, 18 th International Conference on MICCAI (\$1000 _{USD})
2015	Best poster presentation, 31 st International Epilepsy Congress, Istanbul
2014	Grass Young Investigator Award, 68 th American Epilepsy Society, Seattle (\$1000 $_{USD}$)
2014	Desjardins Outstanding Student Award, Montreal Neurological Institute (\$20,000 $_{CAD}$)

2013 Simon Groom Travel Award, Montreal Neurological Institute (\$1000 _{CAD})

F. Talks

2020.08	Advanced neuroimaging-based phenotyping in autism spectrum disorder: categorical vs. dimensional approach. 23 rd Annual meeting of Korean Society for Brain and Neural Science, Seoul, Korea
2020.06	Toward A Connectivity Gradient-based Framework for Reproducible Biomarker Discovery, 26th Annual meeting for the Organization for Human Brain Mapping, Montreal, Canada
2020.05	<i>Towards Neurosubtyping of Autism</i> , Annual Meeting of International Society for Autism Research, Seattle, Washington
2020.03	Connectome Analysis in Brain Disorders with Focal Lesions. Children National Hospital, Washington DC, Brain Plasticity Seminar.
2019.12	Advanced Computational Neuroimaging in Atypical Brain Development, Georgetown University, Washington DC, Seminar
2019.06	Translating the Vogt-Vogt myeloarchitectonic map to the 3D cortical surface in the human brain, 25th Annual meeting for the Organization for Human Brain Mapping, Rome, Italy
2019.05	Trends in neuroimaging of developmental disorders. Seminar at Busan Paik Hospital, Inje University, Busan, South Korea.

2019.05	Update on epilepsy imaging. Presidential Symposium and Parallel session. Korean Child Neurology Society, 2019 Annual Meeting, Busan, South Korea
2019.05	Translational Neuroimaging in Atypical Brain Development: From mechanisms to clinical application, CNIR Sungkyunkwan University, South Korea
2019.04	Structural and functional neuroanatomy of autism spectrum disorders. International Society for Autism Research, 2019 Annual Meeting, Montreal, Canada
2019.02	Advanced neuroimaging in epilepsy and autism. Seminar at Center for Biomedical Imaging and Neuromodulation, Nathan Kline Institute, New York, USA
2018.12	Relation between lesion topography and sulcal pits in focal cortical dysplasia type-II. Pediatric Highlight. American Epilepsy Society, Annual meeting, New Orleans, USA
2018.12	Multimodal MRI phenotyping of Focal cortical dysplasia. Special Interest Group. American Epilepsy Society, Annual meeting, New Orleans, USA
2018.09	The superficial white matter in autism and its role in connectivity anomalies and symptom severity. 6 th Biennial Conference on Brain Connectivity, Montreal Canada
2017.12	Atypical functional connectome hierarchy in autism spectrum disorder. Large scale trends in cortical organization, workshop, Leipzig, Germany
2017.12	Multimodal MRI phenotyping of Frontal Lobe Epilepsy. American Epilepsy Society, Annual meeting, Washington DC, USA
2017.06	Multidimensional neuroanatomical subtyping of autism spectrum disorders. Human Brain Mapping, Annual meeting, Vancouver, Canada
2017.04	Connectome-based pattern learning predicts histology and surgical outcome of epileptogenic malformations of cortical development. Epilepsy day. Montreal Neurological Institute, McGill University, Montreal, Canada
2016.12	Structural-Functional Brain Networks in the Spectrum of Cortical Malformation. American Epilepsy Society, Annual meeting, Houston, Texas, USA
2016.10	Gradual Alterations of Structural-Functional Brain Networks in the Spectrum of
	<i>Cortical Malformations</i> . Canadian League Against Epilepsy, Annual scientific meeting, Quebec City, Canada
2016.10	Statistical Analysis for Neuroimaging Data. Canadian League Against Epilepsy, Annual scientific meeting, Quebec City, Canada
2016.10	Neuroimaging of Cortical Malformations, Brain Imaging Center Lecture in Montreal Neurological Institute and Hospital, Canada
2016.06	Multimodal Imaging in Cortical Malformation, KBRI, Daegu, South Korea
2016.05	Advanced Multimodal Imaging in Epileptogenic Cortical Malformation, PhD defense, Montreal Neurological Institute and Hospital, Canada
2015.04	Multicontrast MRI profiling of focal cortical dysplasia type-II, Epilepsy day. Montreal Neurological Institute, McGill University, Montreal, Canada

- 2015.12 Focal Cortical Dysplasia Type-II: MRI-based Profiling and Subtype Prediction, 2015 American Epilepsy Society 69th Annual Meeting, Pediatric Epilepsy Highlights presentation, Philadelphia, USA
- 2014.12 Automated Detection of Cortical Dysplasia In MRI-Negative Epilepsy: Class II Diagnostic Evidence, 2014 American Epilepsy Society 68th Annual Meeting, Seattle, USA

H. Ad-hoc manuscript review

American Journal of Psychiatry, Brain, Neurology, NeuroImage, Human Brain Mapping, Cerebral Cortex, Social Cognitive and Affective Neuroscience, American Journal of Neuroradiology, Epilepsia, Epilepsy Research, NeuroImage: Clinical, Scientific report, IEEE Transactions of Medical Imaging, Plos One

J. References

Andrea Bernasconi, MD	Neda Ladbon Bernasconi, MD PhD
Professor	Associated Professor, Killam Scholar
Group Leader - Epilepsy Program Montreal Neurological Institute	Director - Neuroimaging of Epilepsy Laboratory Montreal Neurological Institute
McGill University	McGill University
<u>andrea@bic.mni.mcgill.ca</u>	<u>neda@bic.mni.mcgill.ca</u>
Boris C. Bernhardt, PhD	Michael P. Milham, MD PhD
Assistant Professor	Phyllis Green and Randolph Cowen Scholar
	Director, Center for the Developing Brain
Killam Scholar & FRQS chercheur boursier Montreal Neurological Institute	Child Mind Institute
McGill University	Director, Center for Biomedical Imaging and
boris@bic.mni.mcgill.ca	Neuromodulation
	Nathan S. Kline Institute for Psychiatric Research michael.milham@childmind.org