

# So Young Choi: Postdoctoral Research Applicant

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## RESEARCH INTERESTS:

Multimodal exploration of the brain's structural, functional and/or cerebrovascular organization of the brain in either a typical or atypical study population.

Specific interests in working with methods examining structural anatomy and brain connectivity.

Specific interests on describing sexually dimorphic characteristics of the brain in a typical population or in response to brain injury in describing neurological disease.

Broadly interested in neuroimaging studies of human brain function and disease using leading-edge acquisition and analysis methods.

## EDUCATION

**Ph.D in Neuroscience, University of Southern California (Expected August 2021)**

Advisors: Richard M. Leahy, PhD & John C. Wood, MD, PhD

“Neurological consequences of chronic anemia: insights from Sickle Cell Disease”

**B.A. in Neuroscience, Minor in Natural Science, University of Southern California (2010)**

## AWARDS

[Neurological Consequences of Chronic Anemia](#)

Sept 2018 – Sept 2021

NIH NINDS: 1F31NS106828

Role: Principal Investigator

Funding Amount: \$115,860

Predocotrinal Training in Interdisciplinary Neurosciences

Sept 2016 – Aug 2017

NIH: 1T32MH111360

Role: supported as student

American Society of Hematology Abstract Achievement Award (2019)

Neuroscience Graduate Program Annual Symposium Poster Award (2018)

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## RESEARCH EXPERIENCE

**2007 - Present**

**Children's Hospital Los Angeles, Heart Institute**

**Advisor: John C. Wood M.D., Ph.D**

**Summer 2014 – Present**

Studying the neurological effects of chronic anemia in patients with and without Sickle Cell Disease using multimodal MR imaging, neurocognitive testing, and blood based biomarkers.

White matter strokes are highly prevalent in patients with sickle cell disease. Decreased hemoglobin is a strong predictive marker of white matter injury patterns and cerebrovascular disease in our patient population with or without sickle cell disease.

My study takes on a multi-signal and multi-modal approach to exploring the pathophysiology of the anemic brain. My main focus is on T1, T2, diffusion and BOLD imaging parameters but also include explorative studies using QSM, ASL, PC and TRUST imaging parameters in collaboration with other members of the lab. Current thesis project.

## **University of Southern California, Signal Image Processing Institute**

**Advisor: Richard M. Leahy, Ph.D**

**Summer 2014 – Present**

Involved in the development of brain image analysis methods in anatomical registration, structural and function brain segmentation, diffusion image processing, fMRI and post-processing/statistical analysis. Aid in deciding the appropriate application and biological interpretations of novel methods developed for MR imaging research.

Development of the BrainSuite software ([brainsuite.org](http://brainsuite.org)): a collection of open source software tools for the processing and analysis of anatomical, diffusion and functional MRI. Development of the [BCI-DNI brain atlas](#), a high-resolution anatomical brain atlas with 95 ROI's and 76 sulci used for registration and segmentation, and the [USCBrain atlas](#), a subparcellation of the BCI-DNI brain atlas guided by rs-fMRI data.

## **Dornsife Neuroimaging Center, University of Southern California**

**Advisor: Hanna H Damasio M.D.**

**Spring 2010 – Summer 2014**

Examined the secondary effects of anterior temporal lesions in the frontal lobe using T1 and DWI. Studied neurodevelopmental outcomes of premature birth in preadolescents using T1, DWI, and MRS. Development and testing of MR image analysis tool, [BrainSuite](#). Started development of the BCI-DNI brain atlas (as described above), semiautomatically extracting the brain and manually labelling 95 ROIs.

## **Research Radiology, Children's Hospital Los Angeles**

**Advisor: Jessica L Wisnowski Ph.D & Ashok Panigrahy M.D.**

**Spring 2011 – Summer 2014**

Studied prematurity and traumatic brain injury in neonatal and adolescent patients using MRS and diffusion MRI. Additionally, visually examined and rated clinical presentations brain trauma including hypoxic-ischemic encephalopathy (HIE), Periventricular Leukomalacia (PVL) and glioblastomas. Collaboration with USC Dornsife and Children's Hospital of Pittsburg of UPMC.

## **Maxine Dunitz Neurosurgical Institute, Cedars Sinai Medical Center**

**Advisor: John S Yu M.D.**

**Summer 2007 – Fall 2007**

Development of nanoparticles and docking abilities of inorganic molecules to neuroreceptors. Ran samples through nuclear magnetic resonance (NMR) spectroscopy, scanning electron microscope (SEM) imaging.

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## **TEACHING EXPERIENCE**

### **[BrainSuite Training Workshop:](#)**

Lead instructor for sessions: Surface Volume Registration (SVReg), BrainSuite Diffusion Pipeline and Hands-On Tractography.

Teaching aid for sessions: Cortical Surface Extraction, Hands-On Interactive GUI session, BrainSuite Statistical Pipeline in R (BSSR) and Batch Processing.

Vancouver (June 2017)

Advanced Neuroimaging Summer Program (July 2013, August 2015 and July 2016,)

BrainSuite/BrainStorm two-day workshop (October 2015)

Children's Hospital Los Angeles (August 2014)

University of Southern California (July 2013)

**Mentorship:** Have trained and managed 5 undergraduate students and 3 master students. Topics include semi-automated brain extraction and registration of T1-weighted images, skull segmentation, lesion mapping and manual lesion identification, diffusion image processing, multimodal processing pipeline development and visual inspection and rating of image quality of T1, T2, diffusion and BOLD MR images. (2013-2019)

## PROFESSIONAL AFFILIATIONS

Organization of Human Brain Mapping (2013-Present)  
International Society for Magnetic Resonance in Medicine (2013, 2019-Present)  
American Society for Hematology (2015, 2019-Present)  
Society for Neuroscience (2015)

## SKILLS

Languages: Matlab, python, bash, html, LaTeX  
Platforms: Unix/Linux, Windows, Mac  
Software: BrainSuite, FSL, AFNI, ANTS, SPM, FreeSurfer and 3DSlicer

## INVITED TALKS

Neuroscience Graduate Program Annual Symposium Talk (2018)  
Neuroscience Graduate Program Annual Retreat Talk (2017)  
Annual Sickle Cell Retreat at Children's Hospital Los Angeles (2015 – 2019)

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## PUBLICATIONS

1. **Choi S**, Joshi AA, Bhushan CB, O'Neil SH, Coates TD, Leahy RM, Wood JC. Alterations of brain connectivity in chronically anemic subjects with and without sickle cell disease. (In Preparation)
2. Kim Y, Joshi AA, **Choi S**, Joshi SH, Leahy RM, Shattuck DW. BrainSuite BIDS Apps: Containerized versions of the BrainSuite processing pipelines. (In Preparation)
3. Vu C, Bush A, **Choi S**, Borzage M, Miao X, Nederveen AJ, Coates TD, Wood JC. Reduced global cerebral oxygen metabolic rate in sickle cell disease and chronic anemias. (Submitted)
4. Joshi AA, **Choi S**, Akrami H, Leahy RM. [fMRI-Kernel Regression: A Kernel-based Method for Pointwise Statistical Analysis of rs-fMRI for Population Studies](#). arXiv preprint arXiv:2012.06972. 2020 Dec 13.
5. Coloiner J, Vu C, Borzage M, Bush A, **Choi S**, Miao X, Chai Y, Galarza C, Leporé N, Tamrazi B, Coates TD, Wood JC. [Transient Hypoxia Model Revealed Cerebrovascular Impairment in Anemia Using BOLD MRI and Near-Infrared Spectroscopy](#). Journal of Magnetic Resonance Imaging. 2020 Nov;52(5):1400-12. <https://doi.org/10.1002/jmri.272> 10. PMID: 32648323; PMCID: PMC7655661
6. Li J, **Choi S**, Joshi AA, Wisnowski JL, Leahy RM. [Temporal non-local means filtering for studies of intrinsic brain connectivity from individual resting fMRI](#). Med Image Anal. 2020 Apr;61:101635. doi: 10.1016/j.media.2020.101635. Epub 2020 Jan 7. PubMed PMID: 32007699; PubMed Central PMCID: PMC7062584.

7. Choi S, Leahy RM, Wood JC. [Lower White Matter Volume in Beta-Thalassemia Associated with Anemia and Cognitive Performance](#). American journal of hematology. 2020 Jun;95(6):E144. doi: 10.1002/ajh.25787. PubMed PMID: 32180241. PMCID: PMC7416506
8. Joshi AA, Choi S, Chong M, Sonkar G, Gonzalez-Martinez J, Nair D, Wisnowski JL, Haldar JP, Shattuck DW, Damasio H, Leahy RM. [A Hybrid High-Resolution Anatomical MRI Atlas with Sub-parcellation of Cortical Gyri using Resting fMRI](#). bioRxiv. 2020 Jan 1. doi: <https://doi.org/10.1101/2020.09.12.294322>.
9. **Choi S**, O'Neil SH, Joshi AA, Li J, Bush AM, Coates TD, Leahy RM, Wood JC. [Anemia predicts lower white matter volume and cognitive performance in sickle and non-sickle cell anemia syndrome](#). Am J Hematol. 2019 Oct;94(10):1055-1065. doi: 10.1002/ajh.25570. Epub 2019 Jul 23. PubMed PMID: 31259431; PubMed Central PMCID: PMC6857783.
10. Chai Y, Bush AM, Coloigner J, Nederveen AJ, Tamrazi B, Vu C, **Choi S**, Coates TD, Lepore N, Wood JC. [White matter has impaired resting oxygen delivery in sickle cell patients](#). Am J Hematol. 2019 Apr;94(4):467-474. doi: 10.1002/ajh.25423. Epub 2019 Feb 21. PubMed PMID: 30697803; PubMed Central PMCID: PMC6874897.
11. Miao X, **Choi S**, Tamrazi B, Chai Y, Vu C, Coates TD, Wood JC. [Increased brain iron deposition in patients with sickle cell disease: an MRI quantitative susceptibility mapping study](#). Blood. 2018 Oct 11;132(15):1618-1621. doi: 10.1182/blood-2018-04-840322. Epub 2018 Jul 25. PubMed PMID: 30045839; PubMed Central PMCID: PMC6182265.
12. Kim B, Fisher BE, Schweighofer N, Leahy RM, Haldar JP, **Choi S**, Kay DB, Gordon J, Winstein CJ. [A comparison of seven different DTI-derived estimates of corticospinal tract structural characteristics in chronic stroke survivors](#). J Neurosci Methods. 2018 Jul 1;304:66-75. doi: 10.1016/j.jneumeth.2018.04.010. Epub 2018 Apr 21. PubMed PMID: 29684462; PubMed Central PMCID: PMC5984168.
13. Joshi AA, Chong M, Li J, **Choi S**, Leahy RM. [Are you thinking what I'm thinking? Synchronization of resting fMRI time-series across subjects](#). Neuroimage. 2018 May 15;172:740-752. doi: 10.1016/j.neuroimage.2018.01.058. Epub 2018 Feb 8. PubMed PMID: 29428580; PubMed Central PMCID: PMC6338442.
14. Bush A, Chai Y, **Choi SY**, Vaclavu L, Holland S, Nederveen A, Coates T, Wood J. [Pseudo continuous arterial spin labeling quantification in anemic subjects with hyperemic cerebral blood flow](#). Magn Reson Imaging. 2018 Apr;47:137-146. doi: 10.1016/j.mri.2017.12.011. Epub 2017 Dec 9. PubMed PMID: 29229306; PubMed Central PMCID: PMC5834316.
15. Coloigner J, Kim Y, Bush A, **Choi S**, Balderrama MC, Coates TD, O'Neil SH, Lepore N, Wood JC. [Contrasting resting-state fMRI abnormalities from sickle and non-sickle anemia](#). PLoS One. 2017;12(10):e0184860. doi: 10.1371/journal.pone.0184860. eCollection 2017. PubMed PMID: 28981541; PubMed Central PMCID: PMC5628803.
16. Chong M, Bhushan C, Joshi AA, **Choi S**, Haldar JP, Shattuck DW, Spreng RN, Leahy RM. [Individual parcellation of resting fMRI with a group functional connectivity prior](#). Neuroimage. 2017 Aug 1;156:87-100. doi: 10.1016/j.neuroimage.2017.04.054. Epub 2017 May 3. PubMed PMID: 28478226; PubMed Central PMCID: PMC5774339.
17. Joshi AA, **Choi S**, Sonkar G, Chong M, Gonzalez-Martinez J, Nair D, Shattuck DW, Damasio H, Leahy RM. [A whole brain atlas with sub-parcellation of cortical gyri using resting fMRI](#). In Medical Imaging 2017: Image Processing 2017 Mar 2 (Vol. 10133, p. 101330O). International Society for Optics and Photonics. doi: 10.1117/12.2254681

18. **Choi S**, Bush AM, Borzage MT, Joshi AA, Mack WJ, Coates TD, Leahy RM, Wood JC. [Hemoglobin and mean platelet volume predicts diffuse T1-MRI white matter volume decrease in sickle cell disease patients](#). *Neuroimage Clin*. 2017;15:239-246. doi: 10.1016/j.nicl.2017.04.023. eCollection 2017. PubMed PMID: 28540180; PubMed Central PMCID: PMC5430155.
19. Bush AM, Borzage MT, **Choi S**, Václavů L, Tamrazi B, Nederveen AJ, Coates TD, Wood JC. [Determinants of resting cerebral blood flow in sickle cell disease](#). *Am J Hematol*. 2016 Sep;91(9):912-7. doi: 10.1002/ajh.24441. Epub 2016 Jul 4. PubMed PMID: 27263497; PubMed Central PMCID: PMC4987198.
20. Bhushan C, Chong M, **Choi S**, Joshi AA, Haldar JP, Damasio H, Leahy RM. [Temporal Non-Local Means Filtering Reveals Real-Time Whole-Brain Cortical Interactions in Resting fMRI](#). *PLoS One*. 2016;11(7):e0158504. doi: 10.1371/journal.pone.0158504. eCollection 2016. PubMed PMID: 27391481; PubMed Central PMCID: PMC4938391.
21. Borzage MT, Bush AM, **Choi S**, Nederveen AJ, Václavů L, Coates TD, Wood JC. [Predictors of cerebral blood flow in patients with and without anemia](#). *J Appl Physiol (1985)*. 2016 Apr 15;120(8):976-81. doi: 10.1152/jappphysiol.00994.2015. Epub 2016 Jan 21. PubMed PMID: 26796758; PubMed Central PMCID: PMC4835904.
22. Bhushan C, Haldar JP, **Choi S**, Joshi AA, Shattuck DW, Leahy RM. [Co-registration and distortion correction of diffusion and anatomical images based on inverse contrast normalization](#). *Neuroimage*. 2015 Jul 15;115:269-80. doi: 10.1016/j.neuroimage.2015.03.050. Epub 2015 Mar 27. PubMed PMID: 25827811; PubMed Central PMCID: PMC4461504.
23. Degnan AJ, Wisnowski JL, **Choi S**, Ceschin R, Bhushan C, Leahy RM, Corby P, Schmithorst VJ, Panigrahy A. [Altered Structural and Functional Connectivity in Late Preterm Preadolescence: An Anatomic Seed-Based Study of Resting State Networks Related to the Posteromedial and Lateral Parietal Cortex](#). *PLoS One*. 2015;10(6):e0130686. doi: 10.1371/journal.pone.0130686. eCollection 2015. PubMed PMID: 26098888; PubMed Central PMCID: PMC4476681.
24. Wisnowski JL, Ceschin RC, **Choi SY**, Schmithorst VJ, Painter MJ, Nelson MD, Blüml S, Panigrahy A. [Reduced thalamic volume in preterm infants is associated with abnormal white matter metabolism independent of injury](#). *Neuroradiology*. 2015 May;57(5):515-25. doi: 10.1007/s00234-015-1495-7. Epub 2015 Feb 10. PubMed PMID: 25666231; PubMed Central PMCID: PMC4405472.
25. Degnan AJ, Wisnowski JL, **Choi S**, Ceschin R, Bhushan C, Leahy RM, Corby P, Schmithorst VJ, Panigrahy A. [Alterations of resting state networks and structural connectivity in relation to the prefrontal and anterior cingulate cortices in late prematurity](#). *Neuroreport*. 2015 Jan 7;26(1):22-6. doi: 10.1097/WNR.0000000000000296. PubMed PMID: 25426826.
26. Habibi A, Ilari B, Crimi K, Metke M, Kaplan JT, Joshi AA, Leahy RM, Shattuck DW, Choi SY, Haldar JP, Ficek B, Damasio A, Damasio H. [An equal start: absence of group differences in cognitive, social, and neural measures prior to music or sports training in children](#). *Front Hum Neurosci*. 2014;8:690. doi: 10.3389/fnhum.2014.00690. eCollection 2014. PubMed PMID: 25249961; PubMed Central PMCID: PMC4158792.

## CONFERENCES ABSTRACTS & PUBLICATIONS/POSTER PRESENTATIONS

1. **Choi S**, Vu C, Leahy RM, Wood JC. [Differential Correlations Between White Matter Microstructure and Perfusion Reveal Microvascular Dysregulation in Sickle Cell Anemia](#). International Society for Magnetic Resonance in Medicine & SMRT Virtual Conference & Exhibition (ISMRM & SMRT), Paris, 2020, 1642
2. Vu C, Bush AM, **Choi S**, Borzage M, Miao X, Li Wenbo, Qin Q, Nederveen AJ, Coates TD, Wood JC. Calibration of TRUST MRI for subjects with sickle cell anemia. International Society for Magnetic Resonance in Medicine 28th Annual Meeting & Exhibition (ISMRM), Paris, 2020
3. Shen J, Vu C, **Choi S**, Nederveen A, Wood JC. Quantitative Measurement of Cerebral Oxygen Extraction in Patients with Sickle Cell Disease after Diamox Infusion Using Asymmetric Spin Echo. International Society for Magnetic Resonance in Medicine 28th Annual Meeting & Exhibition (ISMRM), Paris, 2020, 1820
4. Varadarajan D, Bhushan C, González-Zacarías C, Shattuck DW, **Choi S**, Joshi AA, Liu Y, Haldar J, Leahy RM. [BrainSuite Diffusion Pipeline \(BDP\): Processing tools for diffusion-MRI](#). Organization of Human Brain Mapping Annual Meeting (OHBM), Montreal, 2020, 2049.
5. Joshi AA, **Choi S**, Li J, Akrami H, Leahy RM. A Novel Approach for Group fMRI Studies Using BrainSync Transform and Pairwise Statistics. Organization of Human Brain Mapping Annual Meeting (OHBM), Montreal, 2020, 1838.
6. **Choi S**, Joshi AA, O'Neil SH, Miao X, Li J, Haldar J, Coates T, Leahy RM, Wood JC. [Exploring Anemia's Impact on Brain Microstructure, Volume, Functional Connectivity, Iron and Cognitive Performance](#). 61st American Society of Hematology Annual Meeting and Exposition (ASH), Orlando, 2019, 3553. doi: 10.1182/blood-2019-129544
7. **Choi S**, Joshi AA, Vu C, Li J, O'Neil SH, Wood JC, Leahy RM. [Detecting alterations of brain connectivity in anemic subjects using fMRI under hypoxic and hyperoxic conditions](#). Organization of Human Brain Mapping Annual Meeting (OHBM), Rome, 2019, T035
8. Joshi AA, **Choi S**, Shattuck DW, Leahy RM, [A method for automatic demarcation of sulcal and gyral regions on the cortical surface](#). Organization of Human Brain Mapping Annual Meeting (OHBM), Rome, 2019. (also software demo).
9. Joshi AA, McCoy D, Chong M, Li J, **Choi S**, Shattuck DW, Leahy RM. [BFP: A BrainSuite fMRI pipeline](#). Organization of Human Brain Mapping Annual Meeting (OHBM), Singapore, 2018, 2038
10. Vu C, Coloigner J, **Choi S**, Wood JC. Relative perfusion mapping using BOLD imaging with induced hypoxia. International Society for Magnetic Resonance in Medicine Joint Annual Meeting (ISMRM-ESMRMB), Paris, 2018 2292.
11. Li J, **Choi S**, Joshi AA, Wisnowski JL, Leahy RM. [Global pdf-based temporal non-local means filtering reveals individual differences in brain connectivity](#). 2018 IEEE 15th International Symposium on Biomedical Imaging (ISBI 2018) 2018 Apr 4 (pp. 15-19). IEEE.
12. Vu C, Bush A, **Choi S**, Miao X, Coates TD, Wood JC. [Chronic Anemia Is Associated with Lower Cerebral and Peripheral Arterio-Venous Oxygen Gradients](#). Blood, 2017 130:3542
13. **Choi S**, O'Neil SH, Joshi AA, Bush AM, Borzage M, Coloigner J, Coates TD, Wood JC, Leahy RM. [The Anemic Brain: Hemoglobin Level Predicts Brain Volume in Watershed Areas and Cognitive Function](#). Organization of Human Brain Mapping Annual Meeting (OHBM), Vancouver, 2017, 1272
14. AA Joshi, **S Choi**, M Chong, G Sonkar, J Gonzalez-Martinez, D Nair, D Shattuck, H Damasio, RM Leahy. USCBrain Atlas: A Volumetric and Surface Atlas Delineated by

- Anatomical and Functional MRI. Organization of Human Brain Mapping Annual Meeting (OHBM), Vancouver, 2017, 1650
15. J Li, **S Choi**, RM Leahy. Global PDF-Based Non-Local Means Filtering of Resting fMRI Data. Organization of Human Brain Mapping Annual Meeting (OHBM), Vancouver, 2017, 1868
  16. **S Choi**, AM Bush, M Borzage, AA Joshi, TD Coates, RM Leahy, JC Wood. [Regional Susceptibility to Chronic Anemia in WM Microstructure Using Diffusion Tensor Imaging](#). 58th American Society of Hematology Annual Meeting and Exposition (ASH), San Diego, 2016, 3640.
  17. **S Choi**, AM Bush, M Borzage, AA Joshi, TD Coates, RM Leahy, JC Wood. [Hemoglobin Level and Platelet Size Predicts Grey and White Matter Volume Loss Measured by Tensor Based Morphology in Sickle Cell Disease](#). 58th American Society of Hematology Annual Meeting and Exposition (ASH), San Diego, 2016, 248.
  18. **S Choi**, J Coloigner, AM Bush, TD Coates, RI Wood, RM Leahy, JC Wood. [Chronic Anemia is Associated with Significant White Matter Atrophy](#). Society for Neuroscience's 46th Annual Meeting (SFN), San Diego, 2016, 13623
  19. Y Chai, J Coloigner, Xiaoping Qu, **S Choi**, AM Bush, M Borzage, C Vu, N Lepore, JC Wood. [Tract specific analysis in patients with sickle cell disease](#). 11th International Symposium on Medical Information Processing and Analysis (SIPAIM), International Society for Optics and Photonics, 2015, 968108, doi:10.1117/12.2213617
  20. **S Choi**, AM Bush, M Borzage, A Joshi, J Coloigner, V Rajagopalan, N Lepore, T Coates, JC Wood. [Diffuse T1-MRI White Matter Volume Decrease in Patients with Sickle Cell Disease](#). 21st Annual Meeting of the Organization for Human Brain Mapping (OHBM), Honolulu, 2015, 3364
  21. AM Bush, M Borzage, **S Choi**, T Coates, JC Wood. [Elevated Cerebral Blood Oxygen Extraction in Non-Transfused Sickle Cell Disease Patients](#). 56<sup>th</sup> American Society of Hematology Annual Meeting and Exposition (ASH), San Francisco, 2014, 1387
  22. AM Bush, M Borzage, S Choi, T Coates, JC Wood. [Elevated Cerebral Metabolic Oxygen Consumption in Sickle Cell Disease](#). 56th American Society of Hematology Annual Meeting and Exposition (ASH), San Francisco, 2014, 2706
  23. M Borzage, AM Bush, **S Choi**, T Coates, JC Wood. [Cerebral Blood Flow and Metabolic Correlates of Near Infrared Spectroscopy in Patients with Sickle Cell Disease](#). 56<sup>th</sup> American Society of Hematology Annual Meeting and Exposition (ASH), San Francisco, 2014, 1386
  24. A Panigrahy, JL Wisnowski, **S Choi**, R Ceschin, N Dosenbach, S Bluml, VJ Schmithorst. [Altered Glutamatergic Fronto-Limbic Network Connectivity in Late Preterm Preadolescents](#). Pediatric Academic Societies and Asian Society for Pediatric Research Joint Meeting (PAS/ASPR), Vancouver, 2014, 2185.7
  25. JL Wisnowski, VJ Schmithorst, **S Choi**, RC Ceschin, S Bluml, P Corby, A Panigrahy. [Gingival Inflammation Is Associated With Altered Tissue Microstructure in Frontolimbic Regions and Memory Performance in Otherwise Healthy Preadolescents](#). Pediatric Academic Societies and Asian Society for Pediatric Research Joint Meeting (PAS/ASPR), Vancouver, 2014, 3814.262
  26. **S Choi**, AA Joshi, C Bhushan, DW Shattuck, RM Leahy, H Damasio, A Panigrahy and JL Wisnowski. [A Multimodal Investigation of Neuronal/Axonal Integrity Using Structural T1-weighted Imaging, Diffusion Tensor Imaging, and H1 MR Spectroscopy](#). 21st Scientific

Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), Salt Lake City, 2013, p. 1951

27. DW Shattuck, AA Joshi, JP Haldar, C Bhushan, **S Choi**, AC Krause, JL Wisnowski, AW Toga and RM Leahy. [Tools for Brain Image Segmentation, Registration, and Connectivity Analysis](#). 21st Scientific Meeting of International Society for Magnetic Resonance in Medicine (ISMRM), Salt Lake City, 2013, p. 2691
28. S Choi, C Bhushan, AA Joshi, K Raphel, D Tranel, DW Shattuck, JP Haldar, RM Leahy, H Damasio, JL Wisnowski. [Altered orbitofrontal tissue microstructure in patients with chronic anterior temporal lobe lesions](#). 19th Annual Meeting of the Organization for Human Brain Mapping (OHBM), Seattle, 2013, p. 3781
29. DW Shattuck, AA Joshi, JP Haldar, C Bhushan, S Choi, AC Krause, JL Wisnowski, H Damasio, AW Toga, RM Leahy. [New BrainSuite13 Tools for Image Segmentation, Registration, Connectivity Analysis and Visualization](#). 19th Annual Meeting of the Organization for Human Brain Mapping (OHBM), Seattle, 2013, p. 1688