

May 2020

**Gaelle E. DOUCET, Ph.D.**  
**Director, Brain Architecture, Imaging and Cognition (BrAIC) Lab**  
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### **POSITION**

**Apr 2020-current** **Scientist II, and Director, Brain Architecture, Imaging and Cognition Lab**, Boys Town National Research Hospital (Omaha, NE, USA).  
**Oct 2017-Mar 2020** **Assistant Professor**, Department of Psychiatry, Icahn School of Medicine at Mount Sinai (New York, NY, USA). Investigator Track.

### **EDUCATION**

**Oct 2015-Sep 2017** **Postdoctoral fellow** at Icahn School of Medicine at Mount Sinai, Dpt. Of Psychiatry, at Dr. Sophia Frangou's lab (New York, NY, USA).  
**2011-Sep 2015** **Postdoctoral fellow** at Thomas Jefferson University, Dpts. of Neurology/Neurosurgery, at Dr. Joseph Tracy's lab (Philadelphia, PA, USA).  
**2007- Dec. 2010** **Ph.D. Thesis in Cognitive Neuroscience, University of Caen (France).**  
**Topic: Study of the conscious resting state in functional imaging, including exploration of spontaneous cognition, spontaneous brain activity and their relationship.**  
**Grade:** Very honourable distinction from the examination board.  
Scholarship granted by the French Atomic Energy Commission (Commissariat à l'Energie Atomique) & the local state government (Basse-Normandie).  
**2006-2007** **Master in Neuropsychology. Graduated with Honors.**  
Pierre Mendès-France University (Grenoble, France).

### **AWARDS**

2019: **Dr. Harold and Golden Lampion Clinical Research Award**. Amount \$9,000.  
2018: **Pilot Grant Award** by the Advanced Neuroimaging Research Program (ANRP) from the Translational and Molecular Imaging Institute (TMII), at the Icahn School of Medicine at Mount Sinai.  
2018: **Travel Fellowship Award** for the 2019 annual meeting of the Society of Biological Psychiatry (SOBP).  
2016: **Award** for the paper: "Early and late age of seizure onset have a differential impact on brain resting-state organization in temporal lobe epilepsy." Doucet et al., *Brain Topography*.28:113-126. **Organization of the Human Brain Mapping.**  
2012: **Award** for the paper: "Patterns of hemodynamic low-frequency oscillations in the brain are modulated by the nature of free thought during rest." Doucet et al., *Neuroimage* 59(4):3194-3200. **Organization of the Human Brain Mapping.**  
2006: Merit Scholarship for Masters Degree, University Pierre Mendes-France, Grenoble, France.

### **GRANTS**

#### ***Current Research Support***

05/2020 – 04/2023: P20GM130447, National Institute of General Medical Sciences (NIGMS)  
Wilson, Tony (PI)  
Cognitive Neuroscience of Development and Aging (CONDA) Center  
Role: Junior PI

08/2019 - 05/2021: R03AG064001, National Institute of Aging (NIA)  
Doucet, Gaelle (PI)  
Atlas55+: Creation and Validation of a Reference Brain Atlas for Late Adulthood

#### ***Completed Research Support***

07/2013 - 06/2014: Behavioral Science Post-doctoral Fellowship

Epilepsy Foundation of America  
Doucet, Gaelle (PI)

Can resting-state networks predict cognitive change after epilepsy surgery?

The goal of this project was to determine the ability of key well-defined resting-state networks to predict neurocognitive outcomes (executive function, episodic memory, attention, language, visuo-spatial and verbal working memory) after a brain surgery (anterior temporal lobectomy) in temporal lobe epilepsy patients.

Role: PI

### **PUBLICATIONS in peer-reviewed journals**

1. P. Vidal-Ribas, D. Janiri, **G. E. Doucet**, N. Pornpattananangkul, D. Nielson, S. Frangou, A. Stringaris. (2020) Multimodal neuroimaging and suicidality in a US population-based sample of school-aged children. medRxiv 19013193; doi: <https://doi.org/10.1101/19013193>
2. S. Frangou, A. Modabbernia, [...], **G. E. Doucet**, [...], G. Schumann, IMAGEN consortium (2020) Linked Patterns of Biological and Environmental Covariance with Brain Structure in Adolescence: A Population-Based Longitudinal Study. *Molecular Psychiatry*.
3. **G. E. Doucet**<sup>\*</sup>, D. Janiri<sup>\*</sup>, M. Pompili, G. Sani, B. Luna, D. A. Brent, S. Frangou. (2020) Risk and protective factors for childhood suicidality in a US population-based sample. *The Lancet Psychiatry*. 7(4):317-326. <sup>\*</sup> equal contribution
4. **G. E. Doucet**, M. J. Luber, P. Balchandani, I. E. Sommer, S. Frangou (2019) Abnormal Auditory Tonotopy in Patients with Schizophrenia. *NPJ Psychiatry*. 5:16.
5. D. Janiri, D. A. Moser, **G. E. Doucet**, M. J. Luber, A. Rasgon, WH. Lee, J. W. Murrough, G. Sani, S. B. Eickhoff, S. Frangou (2019). Shared neural phenotypes for mood and anxiety disorders: A meta-analysis of 226 task-related functional imaging studies. *JAMA Psychiatry*. doi:<https://doi.org/10.1001/jamapsychiatry.2019.3351>.
6. **G. E. Doucet**, W. H. Lee, S. Frangou (2019) Evaluation of the spatial variability in the major resting-state networks across human brain functional atlases. *Human Brain Mapping*.40:4577-4587.
7. M. M. Hoch, **G. E. Doucet**, D. A. Moser, WH. Lee, K. A. Collins, K. M. Huryk, K. E. DeWilde, L. Fleysler, D. V. Iosifescu, J. W. Murrough, D. S. Charney, S. Frangou, B. M. Iacoviello (2019) Initial Evidence for Brain Plasticity Following the Emotional Faces Memory Task Training for Depression. *Chronic Pain*. 3:1-10.
8. S. M.C. de Zwarte, [...], **G. E. Doucet**, [...], P. M. Thompson, R. S. Kahn, N.E.M. van Haren (2019) The association between familial risk and brain abnormalities is disease-specific: an ENIGMA–Relatives study of schizophrenia and bipolar disorder. *Biological Psychiatry*. 86(7):545-556.
9. **G. E. Doucet**, D. A. Moser, A. Rodrigue, D. S. Bassett, D. Glahn, S. Frangou. (2019) Person-based brain morphometric similarity is heritable and correlates with biological features. *Cerebral Cortex*. 29(2):852-862.
10. E. Sprooten, R. O'Halloran, J. Dinse, W. H. Lee, D. A. Moser, **G. E. Doucet**, M. Goodman, H. Krinsky, A. A. Paulino, A. Rasgon, E. Leibu, P. Balchandani, M. Inglese, S. Frangou. (2019) Depth-dependent intracortical myelin organization in the living human brain determined by in vivo ultra-high field magnetic resonance imaging. *NeuroImage*. 185:27-34.
11. W. H. Lee, D. A. Moser, A. Ing, **G. E. Doucet**, S. Frangou (2019) Behavioral and health correlates of resting-state metastability in the Human Connectome Project. *Brain Topography*. 32(1):80-86.
12. **G. E. Doucet**, D. A. Moser, M. J. Luber, E. Leibu, S. Frangou. (2018) Baseline Brain Structural and Functional Predictors of Clinical Outcome in the Early Course of Schizophrenia. *Molecular Psychiatry*. DOI: 10.1038/s41380-018-0269-0
13. M. Schafer, J-W Kim, J. Joseph, J. Xu, S. Frangou, **G. E. Doucet**. (2018) Imaging habenula volume in schizophrenia and bipolar disorder. *Frontiers in Psychiatry*. 9:456.
14. W. H. Lee, **G. E. Doucet**, E. Leibu and S. Frangou (2018) Resting-State Network Connectivity and Metastability Predict Clinical Symptoms in Schizophrenia. *Schizophrenia Research*. 201:208-216.
15. J. W. Kim, T. P. Naidich, J. Joseph, D. Nair, M. F. Glasser, R. O'Halloran, **G. E. Doucet**, W. H. Lee, H. Krinsky, A. Paulino, D. C. Glahn, A. Anticevic, S. Frangou and J. Xu (2018) Reproducibility of Myelin Content-based Human Habenula Segmentation at 3 T. *Human Brain Mapping*. 39(7):3058-3071.
16. D. A. Moser, **G. E. Doucet**, W. H. Lee, A. Rasgon, H. Krinsky, E. Leibu, A. Ing, G. Schumann, N. Rasgon and S. Frangou (2018). Multivariate associations among behavioral, clinical and multimodal imaging phenotypes in psychosis. *JAMA Psychiatry*. 75(4):386:395.
17. **G. E. Doucet**, N. Rasgon, B. S. McEwen, N. Micali and S. Frangou (2018) Elevated body mass index is associated with increased integration and reduced cohesion of sensory-driven and internally-guided resting-state functional brain networks. *Cerebral Cortex* 3(1):988-997.
18. **G. E. Doucet**<sup>\*</sup>, D. A. Moser<sup>\*</sup>, A. Ing, D. Dima, G. Schumann, R. Bilder and S. Frangou (2018) An integrated brain-behavior model for working memory. *Molecular Psychiatry*. 23(10):1974-1980. <sup>\*</sup> equal contribution
19. **G. E. Doucet**, D. S. Bassett, N. Yao, D. C. Glahn and S. Frangou (2017) The role of intrinsic brain functional connectivity in vulnerability and resilience to bipolar disorder. *American Journal of Psychiatry*. 174(12):1214-1222.

20. N. Sideman, G. Chaitanya, X. He, **G. E. Doucet**, N. Y Kim, M. R. Sperling, A. Sharan, J. I. Tracy (2018). Task Activation and Functional Connectivity Show Concordant Memory Laterality in Temporal Lobe Epilepsy. *Epilepsy & Behavior*. 81:70-78.
21. X. He, **G. E. Doucet**, D. Pustina, M. Sperling, A. Sharan, J. Tracy (2017) Presurgical thalamic “hubness” predicts surgical outcome in temporal lobe epilepsy. *Neurology*. 88(24):2285-2293.
22. **G. E. Doucet**, X. He, M. Sperling, A. Sharan, and J. Tracy (2017) From “rest” to language task: Task activation selects and prunes from broader resting-state network. *Human Brain Mapping*. 38(5):2540-2552.
23. D. A. Monti, A. Tobia, M. Stoner, N. Wintering, M. Matthews, X. S. He, **G. E. Doucet**, I. Chervoneva, J. I. Tracy and A. B. Newberg (2017) Neuro-emotional technique effects on brain physiology in cancer patients with traumatic stress symptoms: preliminary findings. *J Cancer Surviv*. 11(4): 438-446.
24. L. Robinson, X. He, P. Barnett, **G. E. Doucet**, M. R. Sperling, A. Sharan, and J. I. Tracy (2017) The temporal instability of resting state network connectivity in intractable epilepsy. *Human Brain Mapping*. 38(1):528-540.
25. **G. E. Doucet**, X. He, M. Sperling, A. Sharan, and J. Tracy (2016) Gray matter abnormalities in temporal lobe epilepsy: Relation with resting-state functional connectivity and episodic memory performance. *PlosOne*. 11(5):e0154660.
26. **G. E. Doucet**, X. He, M. Sperling, A. Sharan, and J. Tracy (2015) Frontal gray matter abnormalities predict seizure outcome in refractory temporal lobe epilepsy patients. *Neuroimage: Clinical*. 9:458-466.
27. D. Pustina, B. Avants, M. Sperling, R. Gorniak, X. He, **G. Doucet**, P. Barnett, S. Mintzer, A. Sharan, and J. Tracy (2015) Predicting the laterality of temporal lobe epilepsy from PET, MRI, and DTI: A multimodal study. *Neuroimage: Clinical*. 9:20-31.
28. X. He, **G. Doucet**, M. Sperling, A. Sharan, and J. I. Tracy. (2015) Reduced thalamocortical functional connectivity in temporal lobe epilepsy. *Epilepsia*. 56(10):1571-9
29. **G. Doucet**, R. Rider, N. Taylor, C. Skidmore, A. Sharan, M. Sperling, and J. I. Tracy. (2015) Pre-surgery resting-state local graph-theory measures predict neurocognitive outcomes after brain surgery in temporal lobe epilepsy. *Epilepsia*. 56(4):517-526.
30. **G. Doucet**, D. Pustina, C. Skidmore, A. Sharan, M. Sperling, and J. Tracy. (2015) Resting-state functional connectivity predicts the strength of hemispheric lateralization for language processing in temporal lobe epilepsy and normals. *Human Brain Mapping*. 36(1):288-303.
31. D. Pustina, **G. Doucet**, M. Sperling, A. Sharan, and J. Tracy. (2015) Increased microstructural white matter correlations in left, but not right, temporal lobe epilepsy. *Human Brain Mapping*. 36(1):85-98.
32. **G. Doucet**, A. Sharan, D. Pustina, C. Skidmore, M. Sperling and J. Tracy. (2015) Early and late age of seizure onset have a differential impact on brain resting-state organization in temporal lobe epilepsy. *Brain Topography*.28:113-126. **Received Best Publication Award at OHBM 2016.**
33. D. Pustina, **G. Doucet**, J. Evans, A. Sharan, M. Sperling, C. Skidmore and J. Tracy. (2014) Distinct types of white matter changes are observed after anterior temporal lobectomy in epilepsy. *PlosOne*. 9(8):e104211.
34. D. Pustina, **G. Doucet**, C. Skidmore, M. Sperling, and J. Tracy. (2014) Contralateral interictal spikes are related to tapetum damage in left temporal lobe epilepsy. *Epilepsia*. 55(9):1406-14.
35. **G. Doucet**, C. Skidmore, J. Evans, A. Sharan, M. Sperling, D. Pustina, and J. Tracy. (2014) Temporal lobe epilepsy and surgery selectively alter the dorsal, not the ventral, default-mode network. *Frontiers in Neurology* 5:23.
36. J. Tracy, K. Osipowicz, P. Spechler, A. Sharan, C. Skidmore, **G. Doucet** and M. Sperling. (2014) Functional Connectivity Evidence of Cortico-Cortico Inhibition in Focal Temporal Lobe Epilepsy. *Human Brain Mapping* 35(1):353-66.
37. **G. Doucet**, C. Skidmore, A. Sharan, M. Sperling and J. Tracy (2013). Functional connectivity abnormalities in right but not left temporal epilepsy vary by amygdala subdivision and are associated with mood symptoms. *Brain and Cognition* 83:171-182.
38. **G. Doucet**, K. Osipowicz, A. Sharan, M. Sperling and J. Tracy. (2013) Hippocampal functional connectivity patterns during spatial working memory differ in right versus left temporal lobe epilepsy. *Brain Connectivity* 3(4):398-406.
39. **G. Doucet**, K. Osipowicz, A. Sharan, M. Sperling and J. Tracy. (2013) Extra-temporal functional connectivity impairments at rest are related to memory performance in mesial temporal epilepsy. *Human Brain Mapping* 34(9):2202-16.
40. M. Naveau, G. Doucet, N. Delcroix, L. Petit, L. Zago, F. Crivello, G. Jobard, E. Mellet, N. Tzourio-Mazoyer, B. Mazoyer and M. Joliot. (2012) A novel group ICA approach based on multi-scale individual component clustering. Application to a large sample of fMRI data. *Neuroinformatics* 10:269-285.
41. G. Doucet, M. Naveau, L. Petit, L. Zago, F. Crivello, G. Jobard, N. Delcroix, E. Mellet, N. Tzourio-Mazoyer, B. Mazoyer and M. Joliot. (2012) Patterns of hemodynamic low-frequency oscillations in the brain are modulated by the nature of free thought during rest. *Neuroimage* 59(4):3194-3200. Received Best Publication Award at OHBM 2012.
42. G. Doucet, M. Naveau, L. Petit, N. Delcroix, L. Zago, F. Crivello, G. Jobard, N. Tzourio-Mazoyer, B. Mazoyer, E. Mellet and M. Joliot. (2011) Brain activity at rest: A multi-scale hierarchical functional organization. *Journal of Neurophysiology* 105(6):2753-63.

43. P. Delamillieure, G. Doucet, M.R. Turbelin, N. Delcroix, E. Mellet, L. Zago, F. Crivello, L. Petit, N. Tzourio-Mazoyer, B. Mazoyer and M. Joliot. (2010) The resting-state questionnaire: an introspective questionnaire for the evaluation of inner experience during the conscious resting state. *Brain Research Bulletin* 81(6):565-573.
44. C. Perez, C. Peyrin, C. Cavézian, O. Coubard, F. Caetta, N. Raz, N. Levin, G. Doucet, F. Andersson, M. Obadia, O. Gout, F. Héran, J. Savatovsky and S. Chokron. (2013) An fMRI investigation of the cortical network underlying detection and categorization abilities in hemianopic patients. *Brain topography* 26(2):264-77.
45. C. Cavézian, I. Gaudry, C. Perez, O. Coubard, G. Doucet, C. Peyrin, C. Marendaz, M. Obadia, O. Gout and S. Chokron. (2010) Specific impairments in visual processing following lesion side in hemianopic patients. *Cortex* 46(9):1123-31.
46. C. Perez, C. Cavézian C. Peyrin O. Coubard, G. Doucet, F. Andersson, O. Gout, J. Savatovsky and S. Chokron. (2009) Plasticité des aires visuelles corticales après une lésion rétrochiasmatisique : approche en neuro-imagerie. *Revue de Neuropsychologie neurosciences cognitives et cliniques* 1(3):1-7.
47. B. Ballester, O. Ramuz, C. Gisselbrecht, **G. Doucet**, L. Loï, B. Loriod, F. Bertucci, R. Bouabdallah, E. Devilard, N. Carbuccia, M-J. Mozziconacci, D. Birnbaum, P. Brousset, F. Berger, G. Salles, J. Brière, R. Houlgatte, P. Gaulard and L. Xerri. (2006) Gene expression profiling identifies molecular subgroups among nodal peripheral T-cell lymphomas. *Oncogene* 25(10):1560-70.

### **Book Chapter, Review and Commentary**

1. **G. E. Doucet** (2018) Commentary on “Psychosis in bipolar disorder: Does it represent a more ‘severe’ illness?”. *Bipolar Disorders*. 20(3):282-283.
2. J. I. Tracy and **G. E. Doucet** (2015). Resting-State Functional Connectivity in Epilepsy: Growing Relevance for Clinical Decision Making. *Current Opinion in Neurology*. 28(2):158-165.
3. J. I. Tracy, D. Pustina, **G. Doucet**, and K. Osipowicz (2015). Cognitive Reorganization in Epilepsy. In *Plasticity of Cognition in Neurologic Disorders*, J. Tracy, B. Hampstead, and K. Sathian (Eds.), Oxford University Press, New York.

### **INVITED TALKS**

- **26<sup>th</sup> European Congress of Psychiatry (EPA)**. “The relationship between metabolism, brain and behavior.” Nice (France). March 3-6 2018.
- **1<sup>st</sup> International Summer School CONNECTOMICS**. “Extrinsic/Intrinsic Modular organization” Bordeaux (France). Sept. 22-28 2014.
- **3<sup>rd</sup> European Conference on Clinical Neuroimaging (ECCN)**. “Temporal lobe epilepsy: Is resting-state functional connectivity relevant?” Lille (France). March 31<sup>st</sup> & April 1<sup>st</sup> 2014.
- **7<sup>th</sup> Postdoctoral Research Symposium** at Thomas Jefferson University. “Resting-state functional connectivity impairments emerging from the amygdala are associated with anxiety in mesial temporal lobe epilepsy patients”. Philadelphia (USA). June 11<sup>th</sup> 2012.
- **Donders Discussions**. Session: State-dependent resting-state connectivity. Nijmegen (The Netherlands). October 1<sup>st</sup> & 2<sup>nd</sup> 2009.

### **TEACHING EXPERIENCE/ SEMINAR**

2008-2011: **Master Biology, Neuroscience and MRI, University of Caen (France)**

- Creation of experimental paradigms using IFIS / e-prime
- Lecturer in Cognitive Neurosciences (about the conscious resting-state)

2016-: **NeuroConnect Class**, Icahn School of Medicine at Mount Sinai (New York, NY) (Graduate School)

- Lectures on graph-theory and resting-state functional connectivity

2018: **Cognitive Neuroscience Seminar** at the Department of Neurology, Columbia University (New York, NY).

### **MEMBERSHIP AND OTHER EXPERIENCE**

2017- Junior Editor at the journal *Bipolar Disorders*.

2018- Review Editor at *Frontiers in Psychiatry*, Section: Schizophrenia.

2019- Associate Editor at *Frontiers in Psychiatry*, Section: Aging Psychiatry.

2019- Member of the Ph.D. Thesis Advisory Committee for Dr. Amirhossein Modabbernia, M.D., at the Icahn School of Medicine at Mount Sinai.

### **Member of:**

The Organization of Human Brain Mapping  
The Society of Biological Psychiatry

**Ad hoc Reviewer:**

Brain Connectivity, Brain Imaging and Behavior, Brain Research, Biological Psychiatry, Biological Psychiatry: CNI, Bipolar Disorders, Cerebral Cortex, Epilepsy Research, European Psychiatry, Frontiers, Human Brain Mapping, Journal of Affective Disorders, Journal of Visualized Experiments, Neuroimage, Neuroimage Clinical, Neuroscience & Biobehavioral Reviews, Psychiatry Research, PsychoPharmacology, Schizophrenia Bulletin, Scientific Reports.