

CURRICULUM VITAE  
**Désirée Lussier-Lévesque**

(publishing as Désirée Lussier)

University of Montreal

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## **EDUCATION**

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- 2019      Ph.D. Developmental Psychology, Behavioral and Cognitive Neuroscience (*dual specialization*), University of Florida
- 2018      M.S. Psychology, University of Florida

## **PROFESSIONAL APPOINTMENTS**

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- 2021 -      *Postdoctoral Researcher*, Department of Psychology, Université de Montréal, Montréal, QC, Canada
- 2019 -      *Postdoctoral Researcher*, Centre de recherche de l'Institut universitaire de gériatrie de Montréal, Université de Montréal, Montréal, QC, Canada
- 2015 - 2019      *Graduate Student Research Assistant*, University of Florida, Department of Psychology, Gainesville, FL, USA
- 2013 - 2015      *Clinical Research Associate*, Seattle Children's Research Institute, Child Health, Behavior and Development, Seattle, WA, USA
- 2012 – 2015      *Research Assistant*, University of Washington Medical Center, Radiology Department, Integrated Brain Imaging Center, Seattle, WA, USA

## **PUBLICATIONS**

(Last name changed from Gulliford to Lussier in 2017)

*Peer reviewed*

Badhwar A., Collin-Verreault, Y., **Lussier, D.**, Sharmarke, H., Orban, P., Urchs, S., Chouinard, I., Vogel, J., Potvin, O., Duchesne, S., Bellec, P. (2020). A dataset of long-term consistency values of resting-state fMRI connectivity maps in a single

individual derived at multiple sites and vendors using the Canadian Dementia Imaging Protocol. *Data in Brief*. 31:105699.

**Lussier, D.**, Cruz-Almeida, Y., Ebner, N.C. (2019) Musculoskeletal pain and brain morphology: oxytocin's potential as a treatment for chronic pain in aging. *Frontiers in Aging Neuroscience*. 11:338. doi: 10.3389/fnagi.2019.00338

Richards T., Grabowski T., Askren, K., Boord, P., Yagle, K., Mestre, Z, Robinson, P., Welker, O., **Gulliford, D.**, Nagy, W., Berninger, V. (2015). Contrasting brain patterns of writing-related DTI parameters, fMRI connectivity, and DTI-fMRI connectivity correlations in children with and without dysgraphia or dyslexia. *Neuroimage: Clinical*, 8, 408-421. doi: 10.1016/j.nicl.2015.03.018

#### *Encyclopedia entries*

Ebner, N.C., **Gulliford, D.**, Yumusak, S. (2016). Saccadic Eye Movement. *Encyclopedia of Clinical Neuropsychology*. doi: 10.1007/978-3-319-56782-2\_1400-2

#### *Thesis/dissertation*

**Lussier, D.** (2019). Pain and Aging: Brain Structure and the Effects of Oxytocin (Doctoral dissertation). *University of Florida*.

**Lussier, D.** (2018). Age differential effects of oxytocin on resting state functional connectivity in women (Master's thesis). *University of Florida*.

#### *Consortia*

Gau, R., Noble, S., Heuer, K., Bottenhorn, K. L., Bilgin, I. P., Yang, Y.-F., ... & Brainhack Community. (*in press*). Brainhack: developing a culture of open, inclusive, community-driven neuroscience. *Neuron*.  
<https://doi.org/10.17605/OSF.IO/4SZCT> (Member of Brainhack Community)

Harrop, C., Libsack, E., Bernier, R., Dapretto, M., Jack, A., McPartland, J. C., ... & GENDAAR Consortium. (2021). Do Biological Sex and Early Developmental Milestones Predict the Age of First Concerns and Eventual Diagnosis in Autism Spectrum Disorder? *Autism Research*, 14(1), 156-168. (Member of GENDAAR Consortium)

Hernandez, L. M., Lawrence, K. E., Padgaonkar, N. T., Inada, M., Hoekstra, J. N., Lowe, J. K., ... & Dapretto, M. on behalf of GENDAAR Consortium. (2020). Imaging-genetics of sex differences in ASD: distinct effects of OXTR variants on

brain connectivity. *Translational psychiatry*, 10(1), 1-12. (Member of GENDAAR Consortium)

Lawrence, K. E., Hernandez, L. M., Eilbott, J., Jack, A., Aylward, E., Gaab, N., ... & Dapretto, M. on behalf of GENDAAR Consortium. (2020). Neural responsivity to social rewards in autistic female youth. *Translational psychiatry*, 10(1), 1-12. (Member of GENDAAR Consortium)

Clawson, A., Strang, J. F., Wallace, G. L., Gomez-Lobo, V., Jack, A., Webb, S. J., ... & GENDAAR Research Consortium. (2020). Parent-child concordance on the Pubertal Development Scale in typically developing and autistic youth. *Research in Autism Spectrum Disorders*, 77, 101610. (Member of GENDAAR Consortium)

Lawrence, K. E., Hernandez, L. M., Bowman, H. C., Padgaonkar, N. T., Fuster, E., Jack, A., ... & GENDAAR Consortium. (2020). Sex differences in functional connectivity of the salience, default mode, and central executive networks in youth with ASD. *Cerebral Cortex*, 30(9), 5107-5120. (Member of GENDAAR Consortium)

Hull, J. V., Dokovna, L. B., Jacokes, Z. J., Torgerson, C. M., Irimia, A., Van Horn, J. D., & GENDAAR Research Consortium. (2018). Corrigendum: Resting-State Functional Connectivity in Autism Spectrum Disorders: A Review. *Frontiers in psychiatry*, 9, 268. (Member of GENDAAR Consortium)

## **FELLOWSHIPS, FUNDING AND AWARDS**

2021            *Neuro-AI Excellence Scholarship*, Union Neuroscience et Intelligence Artificielle - Québec (UNIQUE), \$20,000

2018            *McKnight Brain Institute Training Enhancement Opportunity Travel Award*, University of Florida, \$1,850

2015 - 2019    *Graduate Fellowship Top-Off Award*, University of Florida, College of Liberal Arts and Sciences and Department of Psychology, \$5,000 per year for 4 years

2015 - 2019    *Graduate School Fellowship Program Award*, University of Florida, College of Liberal Arts and Sciences and Department of Psychology

2013            *Magna Cum Laude*, Ashford University, Department of Psychology

## CONFERENCE PRESENTATIONS

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(Last name changed from Gulliford to Lussier in 2017)

(\*indicates undergraduate/trainee presenter)

**Lussier, D.**, Badhwar, A., Boukhdhir, A., Paugam, F., Shamarke, H., Duchesne, S., Bellec, P. (anticipated June 2021). *Comparison of functional parcellation embedding quality on resting-state fMRI in heterogeneous data*. Poster to be presented at the Annual Meeting of the Organization for Human Brain Mapping, virtual.

**Lussier, D.**, Badhwar, A., Shamarke, H., Boré, A., Dixon, R., Bellec, P. (October 2020). *Evaluating the embedding quality of whole-brain dynamic parcellation (Dypac) resting-state fMRI on the CCNA and SIMON datasets*. Recorded video poster presentation for the Canadian Consortium on Neurodegeneration in Aging, virtual, Canada

\*Myers, E., **Lussier, D.**, Horta, M., Frazier, I., Polk, R., Feifel, D., Ebner, N. C. (June 2019). *Four-week intranasal oxytocin increases insula volume and associated empathy scores in aging*. Poster presented at the Annual Meeting of the Organization for Human Brain Mapping, Rome, Italy.

**Lussier, D.**, Fillingim, R.B., Riley, J.L., Cohen, R., Woods, A., Porges, E., Ebner, N.C., Cruz-Almeida, Y. (April 2019) *Associations between pain interference and brain volume in community-dwelling older adults*. Poster presented the *American Pain Society Scientific Meeting*, Milwaukee, WI, USA.

\*Myers, E., **Lussier, D.**, Horta, M., Frazier, I., Polk, R., Feifel, D., Ebner, N. C. (January 2019). *Increase in empathy and insula volume after 4-week intranasal oxytocin administration in older adults*. Poster presented at 9<sup>th</sup> Annual North Central Florida Chapter of the Society for Neuroscience Conference, Gainesville, Florida.

Ebner, N. C., Månsson, K. N. T., Lin, T., **Lussier, D.**, Horta, M., Frazier, I., Weir, D., Feifel, D., Fischer, H. (January 2019). *Neuroplasticity and cognitive benefits associated with chronic intranasal oxytocin administration in aging*. Talk at the Alpine Brain Imaging Meeting, Champéry, Switzerland.

**Lussier, D.**, Horta, M., Porges, E., Woods, A., Cohen, R., Ebner, N.C., Cruz-Almeida, Y. (November 2018). *Pain modulation is associated with cingulate morphology in older adults with musculoskeletal pain*. Poster presentation at the Society for Neuroscience Conference, San Francisco, CA, USA.

**Lussier, D.**, \*Hayes, R., Horta, M., Lin, T., Frazier, I., Weir, D., Perez, E., Feifel, D., Månsson, K.N.T., Fischer, H., Ebner, N.C. (June 2018). *Four-week intranasal oxytocin vs placebo administration modulation of amygdala and accumbens volume*. Poster presentation at the Annual Meeting of the Organization for Human Brain Mapping, Singapore.

\*Sannegowda, R., **Lussier, D.**, Ebner, N.C., Cruz-Almeida, Y. (June 2018). *Cerebellar white matter volume is associated with clinical and experimental pain in older individuals with musculoskeletal pain*. Poster presentation at the Annual Meeting of the Organization for Human Brain Mapping, Singapore.

Månsson, K. N. T., **Lussier, D.**, Cortes, D. S., Lin, T., Horta, M., Frazier, I., Feifel, D., Fischer, H., Ebner, N. C. (June 2018). *Neuroplasticity after acute and repeated exposure to oxytocin: a multi-site MRI analysis*. Poster presentation at the Annual Meeting of the Organization for Human Brain Mapping, Singapore.

**Gulliford, D.**, Chen, H., Porges, E., Lin, T., Fischer, H., Feifel, D., Cohen, R. A., Ebner, N. C. (June 2017). *Gender-differential effects of intranasal oxytocin on resting-state anterior cingulate activity*. Poster presented at the Annual Meeting of the Organization for Human Brain Mapping, Vancouver, Canada.

Horta, M., Lin, T., **Gulliford, D.**, Cohen, R. A., Ebner, N. C. (April 2016). *Dynamic emotion identification: Effects of age and oxytocin*. Poster presented at the Meeting of the Social and Affective Neuroscience Society, New York City, NY, USA.

Conner, L., Dalton, I., Horta, M., **Gulliford, D.**, Frazier, I., Ebner, N. C., Lighthall, N. (March 2017). *Information integration in economic value judgments: Shift from affective to deliberative decision network regions*. Poster presented at the Annual Meeting of the Society for Social and Affective Neuroscience, Los Angeles, CA, USA.

Horta, M., Lin, T., **Gulliford, D.**, Ebner, N. C. (November 2015). *Dynamic emotion identification: Effects of age and oxytocin*. Poster presented at the Gerontological Society of America's 68th Annual Scientific Meeting, Orlando, FL, USA.

\*Welker, O. **Gulliford, D.**, Aylward, E., Webb, S. (June 2015). *Amygdalar function in emotion processing in adolescent boys and girls*. Poster presented at the Undergraduate Research Symposium, University of Washington, Seattle, WA, USA.

Jack, A., Keifer, C., **Gulliford, D.**, Torgerson, C., Aylward, E., Bookheimer, S., Dapretto, M., Gaab, N., Van Horn, J., Pelphrey, K., GENDAAR Working Group (May 2015). *Sex differences in biological motion perception among youth with ASD: an fMRI investigation*. Poster presented at the International Meeting for Autism Research, Salt Lake City, UT, USA.

Richards, T., Grabowski, T., Askren, K., Collins, E., Yagle, K., **Gulliford, D.**, Welker, O., Beringer, V. (March 2014) *Children with dyslexia/dysgraphia and DTI parameter correlations with reading/language scores*. Poster presented at the New Horizons in Human Brain Imaging conference, Oahu, HI, USA.

Richards, T., Grabowski, T., Askren, K., Peter Boord, P., Yagle, K., Mestre, Z., Reitz, F., Welker, O., **Gulliford, D.**, Liza Young, L., Collins, E., Berninger, V. (November 2013) *Functional and structural connectivity across levels of language in children with dysgraphia*. Poster presented at Society for the Neurobiology of Language conference, San Diego, CA, USA.

Richards, T., Grabowski, T., Askren, K., Collins, E., Yagle, K., **Gulliford, D.**, Welker, O., Beringer, V. (June 2013) *Children with dyslexia/dysgraphia and DTI parameter correlations with reading/language scores*. Poster presented at the Organization for Human Brain Mapping conference, Seattle, WA, USA.

## **INVITED TALKS AND LECTURES**

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| 2021 | <i>Qualité d'embedding des données d'IRM multisite à l'état de repos dans les cohortes cliniques à l'aide de la parcellisation cérébrale.</i> Journée scientifique du Le Consortium pour l'identification précoce de la maladie d'Alzheimer - Québec (CIMA-Q), Québec, Canada (virtual) |
| 2021 | <i>Embedding quality of multisite resting state fMRI data in clinical cohorts using brain parcellation.</i> CIMA-Q Science Day, Québec, Canada (virtual)  |
| 2020 | <i>Resting-state functional MRI as an emergent biomarker in Alzheimer's Disease.</i> Trainee panel on biomarkers, Canadian Consortium on Neurodegeneration in Aging (CCNA), Canada (virtual)  |
| 2018 | <i>Brain structure and oxytocin in pain and aging.</i> Centre de recherche de l'Institut universitaire de gériatrie de Montréal, Université de Montréal, Montreal, QC, CA   |

- 2018      *Brain structure in pain and aging.* University of Florida, Language and Brain group, Gainesville, FL, USA
- 2018      *Scripting with Unix Shell.* University of Florida, Developmental Colloquium, Gainesville, FL, USA
- 2017, 2016      *Socioemotional development in infancy.* University of Florida, Developmental Psychology class, Gainesville, FL, USA
- 2014      *Updates in Autism: New research and the DSM.* Pierce College Fort Steilacoom, Abnormal Psychology class, Lakewood, WA, USA
- 2013      *An introduction to neuroimaging.* Pierce College Fort Steilacoom, Introduction to Psychology class, Lakewood, WA, USA
- 2013      *Neuroimaging and developmental disorders.* Pierce College Fort Steilacoom, Abnormal Psychology class, Lakewood, WA, USA
- 2013      *Posttraumatic stress disorder in combat veterans: A review of treatment methods and experiment proposal.* University of Washington Medical Center, IBIC Lab Meeting, Seattle, WA, US

## **TEACHING EXPERIENCE**

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### *Instructor of Record*

Fall 2018      Instructor, *General Psychology*, University of Florida

### *Teaching Assistantships*

Spring 2016,      Teaching Assistant, *Developmental Psychology*, University of Florida,  
2017, 2019;      (online) undergraduate course (Marina Klimenko)  
Fall 2017

Spring 2018      Teaching Assistant, *General Psychology*, University of Florida,  
(online) undergraduate course (Nicole Dorey)

Fall 2015,      Teaching Assistant, *Developmental Psychology*, University of Florida,  
2016      undergraduate course (Natalie C. Ebner)



## **WORKSHOPS AND SCHOOLS**

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### *Organizer/co-organizer*

- 2021      *Brainhack Global 2020ish MTL*, Montréal, QC, Canada (virtual)
- 2020      *Brainhack School*, Summer 2020, multiple universities, Montréal, QC, Canada (virtual)

### *Instructor*

- 2019      *Introduction to machine learning for neuroimaging*. Traintrack workshop for Brainhack Global 2019, Concordia University Conference Centre, Montréal, QC, Canada
- 2019      *Principal component analysis and pipelines with Sklearn*. Part of the Machine learning educational workshop for Montreal Artificial Intelligence and Neuroscience conference, Montreal Institute for Learning Algorithms (MILA) - Quebec AI Institute, Montréal, QC, Canada

### *Participant*

- 2021      *6th IVADO/MILA Deep Learning School*, Institut de valorisation des données (IVADO) & MILA - Québec AI Institute, Université de Montréal, Montréal, QC, Canada (virtual)
- 2018      *Deep Learning in Neuroimaging and Beyond*, Centre de recherche de l'Institut universitaire de gériatrie de Montréal, Université de Montréal, Montréal, QC, Canada (Andrew Doyle, Joseph Paul Cohen, Thomas Funck)
- 2018      *The Virtual Brain: Node #7*, Montréal Neurological Institute, McGill University, Montréal, QC, Canada
- 2017      *Montreal Artificial Intelligence and Neuroscience: Machine Learning with NiLearn and Scikit*, Centre de Recherches Mathématiques, Université de Montréal, Montréal, QC, Canada (Gaël Varoquaux)
- 2017      *Montreal Artificial Intelligence and Neuroscience: Tensorflow for Deep Learning in Neuroimaging*, Centre de Recherches Mathématiques, Université de Montréal, Montréal, QC, Canada (Robb Brown)
- 2017      *Reproducible Neuroimaging (Repronim) training*, ReproNim: Center for Reproducible Neuroimaging Computation, Washington, DC, USA



## **SERVICE**

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### *Committee Memberships*

- 2020- Brain Art Special Interest Group liaison, Technology Taskforce, Organization for Human Brain Mapping
- 2020- Work Group Chair, Sponsor/Exhibitor/Brain Art Work Group, Technology Taskforce, Organization for Human Brain Mapping
- 2020- Art Exhibit Manager Elect, Brain Art Special Interest Group, Organization for Human Brain Mapping

### *Ad-hoc Reviewer*

- 2021 NeuroImage
- 2020 Neural Regeneration Research
- 2019 Organization for Human Brain Mapping annual meeting 2020
- 2019 Frontiers in Neuroinformatics

## **MENTORSHIP**

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Myers, Elisha, University of Florida, Psychology Undergraduate Thesis: *Effects of Four-Week Intranasal Oxytocin Administration on Insula Volume and Levels of Empathy in Aging*, Spring 2020. PI: Natalie C. Ebner. (Accepted to Florida Atlantic University College of Medicine, USA)

Rachna Sannegowda, University of Florida, Biomedical Engineering Undergraduate Thesis: *Cerebellar White Matter Volume and Clinical Pain in Older Individuals*, Spring 2018. PI: Yenisel Cruz-Almeida. (Accepted to University of Central Florida College of Medicine, USA)

Rita Hayes, University of Florida, Biology Undergraduate Thesis: *The effects of Long-Term Oxytocin Administration on the Cingulate Cortex of Older Adults*, Spring 2018. PI: Natalie C. Ebner. (Accepted to Technion Medical School, Israel)

## **PROFESSIONAL AFFILIATIONS**

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- 2021- Consortium pour l'identification précoce de la maladie d'Alzheimer - Québec (CIMA-Q), student/trainee member

2018-            Society for Neuroscience (SfN), student member

2013-            Organization for Human Brain Mapping (OHBM), junior/student member

2018-2019      American Pain Society (APS), student/trainee member

## **METHODS AND TECHNOLOGY**

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### *Neuroimaging Methods*

DTI, fMRI, sMRI

### *Programming Languages*

Python, R, Unix shell (bash), JavaScript

### *Neuroimaging libraries/tools*

Dypac, Nilearn, fMRIPrep, FSL, CONN, NIAK, Tracula

### *Machine learning and deep learning libraries*

Scikit-Learn, PyTorch, Tensorflow, Keras

### *Other scientific libraries/tools*

Scipy, Numpy

### *Operating Systems*

Linux (Debian, Ubuntu), Windows

### *Spoken/written languages*

English (native), French (limited working), German (limited working)