

LEONARD FAUL

Center for Cognitive Neuroscience
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EDUCATION

Anticipated 2022	Duke University Ph.D. in Psychology & Neuroscience Cognitive Neuroscience Admitting Program (CNAP) Advisors: Dr. Kevin LaBar and Dr. Felipe De Brigard
2017	University of Louisville (UofL) B.S. in Psychology and Biology, Chemistry Minor Summa Cum Laude

HONORS AND AWARDS

2018 - 2022	National Science Foundation Graduate Research Fellowship
2018	Charles Lafitte Graduate Travel Award, Duke University
2017 - 2022	James B. Duke Fellowship
2017	Clay Memorial Biology Scholarship Fund, UofL
2017	Amber M. Heuerman Undergraduate Research Fund Award, UofL
2017	The UofL Woodcock Honorary Society
2017	UofL Honors Scholar
2017	Neuroscience Day Poster Competition Winner, UofL SfN Chapter
2016	UofL Summer Research Opportunity Program
2015	UofL Board of Overseers Mentoring Program
2013 - 2017	Henry Vogt Scholarship, UofL

PUBLICATIONS

- Faul, L., & LaBar, K. S.** (2020). Emotional memory in the human brain. In: Carew, T. J. (Ed.), *Oxford Handbook of the Neurobiology of Learning and Memory*. Oxford, UK: Oxford University Press.
- Faul, L.***, Stjepanovic, D.*, Stivers, J.M., Stewart, G.W., Graner, J.L., Morey, R.A., & LaBar, K.S. (2020). Proximal threats promote enhanced acquisition and persistence of reactive fear learning circuits. *Proceedings of the National Academy of Sciences*, *117*(28), 16678-16689. *co-first authors

- Faul, L.***, Knight, L.K.*, Depue, B.E., Jacob, A.E., Kaelin, D.L., Espay, A.J., & LaFaver, K. (2020) Neural activity changes after inpatient rehabilitation for functional movement disorders. *Psychiatry Research: Neuroimaging*, 303, 111125. *co-first authors
- Faul, L.**, St. Jacques, P.L, DeRosa, J.T., Parikh, N., & De Brigard, F. (2020). Differential contribution of dorsomedial prefrontal and posterior parietal cortices during counterfactual and perspective shifts of episodic autobiographical memories. *NeuroImage*, 215, 116843.
- Faul, L.**, Fogleman, N.D., Mattingly, K.M., & Depue, B.E. (2019). Inhibitory Control Mediates a Negative Relationship Between Body Mass Index and Intelligence: A Neurocognitive Investigation. *Cognitive, Affective, and Behavioral Neuroscience*, 19(2), 392-408
- LaFaver, K., **Faul, L.**, Jacob, A., & Depue, B.E. (2018). Neuroimaging of Functional Movement Disorders (FMD) Before and After a Multidisciplinary Rehabilitation Program. Paper presented at American Academy of Neurology, Los Angeles, CA. *Neurology* 90, S30. 006.
- Lyle, K. B., Dombroski, B. A., Faul, L., Hopkins, R. F., Naaz, F., Switala, A. E., & Depue, B. E. (2017). Bimanual coordination positively predicts episodic memory: A combined behavioral and MRI investigation. *Brain and Cognition*, 118, 71–79.

Under Review/In Preparation

- Wright, R.N., **Faul, L.**, Graner, J.L., Stewart, G.W., LaBar, K.S. (Under Review). Psychosocial Determinants of Anxiety About the COVID-19 Pandemic.
- Faul, L.**, De Brigard, F. (In Prep). The Moderating Effects of Nostalgia on Mood and Optimism During the COVID-19 Pandemic.
- Faul, L.**, & LaBar, K. S. (In Prep). Revisiting Mood Congruent Memory: Mood as a Filter of the Emotional Past.
- Huang, S.*, **Faul, L.***, Sevinc, G., Mwilambwe-Tshilobo, L., Setton, R., Lockrow, A., Turner, G.R., Spreng, R.N. & De Brigard, F. (In Prep). Age-Related Differences in Moral Decision-Making and Resting-State Functional Connectivity. *co-first authors

SELECTED TALKS AND PRESENTATIONS

- Faul, L.** (2020). *Emotional Memories: An Empirical Journey from Consolidation to Reconsolidation (and back again)*. Center for Cognitive Neuroscience, Duke University, Durham, NC
- Faul, L.**, Stivers, J.M., Stjepanovic, D., Stewart, G.W., Graner, J.L., Morey, R.A., & LaBar, K.S. (2019). *Proximal threats promote enhanced acquisition and persistence of reactive fear circuits*. Poster presentation for the Social and Affective Neuroscience Society Conference, Miami, FL

Faul, L., St. Jacques, P.L., DeRosa, J.T., Parikh, N., De Brigard, F. (2019). *Neural activity associated with counterfactual thinking and perspective shift of autobiographical memories*. Poster presentation for the Cognitive Neuroscience Society Conference, San Francisco, CA

Wright, R.N., **Faul, L.**, Hoscheidt, S.M., Adock, R.A., LaBar, K.S. Reward rescues navigation performance from the impairing effects of stress. Duke Institute for Brain Sciences Distinguished Lecture and Symposium. Durham, NC, February 2019.

Faul, L., Stivers, J.M., Stjepanovic, D., Stewart, G.W., Graner, J.L., LaBar, K.S. (2018). *Proximity to Virtual Threats Modulates Fear Learning and Extinction Networks*. Society for Neuroscience Conference, San Diego, CA. – Nanosymposium on Cortical and Subcortical Mechanisms of Learning and Cognition

Mattingly, K.M., **Faul, L.**, Depue, B.E. (2018). *Cortical parietal thickness and hippocampal volume are bidirectionally associated with executive function and impulsive externalizing behavior*. Poster presentation at the Society for Neuroscience Conference, San Diego, CA.

Faul, L., Depue, B.E., Jacob, A.E., Kaelin, D.L., Espay, A.J., LaFaver, K. (2017). *Functional Neuroimaging of Functional Movement Disorders (FMD) Before and After a Rehabilitation Program*. Poster presentation at 3rd International Conference on Functional (Psychogenic) Neurological Disorders, Edinburgh, Scotland.

Faul, L., Mattingly, K.M., Depue, B.E. (2017). *Neuroanatomical Substrates Underlying the Relationship Between Body Mass and Cognitive Functioning*. Poster presentation at the Cognitive Neuroscience Society Conference, San Francisco, CA.

Faul, L., Mattingly, K.M., Depue, B.E. (2016). *The Relationship Between Body Mass, Cognitive Functioning, and Brain Morphometry*. Poster presentation at Research!Louisville, University of Louisville, Louisville, KY.

Faul, L., Mattingly, K.M., Depue, B.E. (2016). *Neuroanatomy Underlying Cognitive, Psychological and Physical Behavior*. Talk presented at the Summer Research Opportunity Program, University of Louisville, Louisville, KY.

Faul, L. (2015). *An Introduction to DTI Tractography*. Guest speaker in a Cognitive Neuroscience Seminar course, University of Louisville, Louisville, KY.

Faul, L. (2014). *Diffusion Tensor Imaging in 3D Slicer: Constructing the Corpus Callosum*. Workshop presented to the Department of Psychological and Brain Sciences, University of Louisville, Louisville, KY.

RESEARCH EXPERIENCE

Duke University

- 2018 - present **LaBar Lab, Dr. Kevin LaBar**
Graduate Student
Topics: *fear conditioning; emotion regulation; stress and reward; emotional memory; mood-congruent memory*
- 2018 - present **Imagination and Modal Cognition Lab, Dr. Felipe De Brigard**
Graduate Student
Topics: *memory modification; counterfactual thinking; perspective shift; autobiographical memory; morality; forgiveness; nostalgia*
- 2017 – 2018 **Egner Lab, Dr. Tobias Egner**
CNAP Rotation Student
Topics: *inhibitory control; emotional interference*

University of Louisville

- 2015 – 2017 **NeuroImaging Laboratory of Cognitive, Affective and Motoric Processes (NILCAMP), Dr. Brendan Depue**
Independent Research Student
Topics: *brain morphometry; cognitive function; functional movement disorders; emotion regulation*
- Summer 2016 **Synaptic Organization, Development and Plasticity of Visual Pathways Lab, Dr. Martha Bickford**
Summer Research Scholar
Topics: *retrograde tracing; thalamic reticular nucleus; serial sections reconstruction*
- 2014 – 2016 **Visual Cognition Laboratory, Dr. John Pani**
Independent Research Student
Topics: *DTI tractography; visual learning; neuroanatomy*

MENTORING EXPERIENCE

- 2019 – 2020 Sarah Haurin
Senior Thesis Student
Summer Neuroscience Program Fellow
Topic: *Investigating the use of visual perspective shift as an implicit emotion regulation technique*

Haurin, S., **Faul, L.**, Parikh, N., LaBar, K.S. (2019). *Perspective Shift and Emotional Regulation of Moral Memories*. Poster presented at the Summer Neuroscience Program closing Conference, Durham, NC

- 2020
Shenyang Huang
CNAP Student
Topic: *Age-Related Differences in Moral Decision-Making and Resting-State Functional Connectivity*
- 2019
Jason Zhang
Independent Research Student
Topic: *Understanding depression through the relationship between stress, serotonin function, and dopamine*

TEACHING EXPERIENCE

- Fall 2020
PSY 105: Abnormal Psychology
Teaching Assistant for Dr. Nancy Zucker
 - Led weekly virtual discussion sections (25 students)
- Spring 2020
PSY 102: Cognitive Psychology
Teaching Assistant for Dr. David Rubin
 - Lectured two discussion sections (40 students)
 - Created and graded all exams
- 08/2019
Teaching Assistant Workshop
Duke University Psychology and Neuroscience
- 07/2019
Duke Neuro Camp Instructor
Lectured on the basics of MRI data acquisition and analysis. Provided a demo at the Duke scanning center.

SERVICE

- 2018 – 2019
Duke Center for Cognitive Neuroscience Journal Club
Organizer
- Summer 2018
Duke Institute for Brain Sciences (DIBS) Discovery Day
Volunteer
- 2018 – 2019
Cognitive Neuroscience Admitting Program
Recruitment Volunteer Coordinator

PROFESSIONAL AFFILIATIONS

Social and Affective Neuroscience Society (SANS); Cognitive Neuroscience Society (CNS); Society for Neuroscience (SfN); Organization for Human Brain Mapping (OHBM); Psi Chi International Honor Society for Psychology

TECHNICAL AND ANALYTICAL SKILLS

Neuroimaging preprocessing and analysis, including:

- Psychophysiological interactions (PPI) and parametric modulation
- Resting-state functional connectivity
- Multivariate techniques (partial least squares, representational similarity analysis)
- Cortical and subcortical gray matter structural analysis
- White matter structural integrity analysis

Collection and analysis of psychophysiological data (skin conductance, facial electromyography)

Amazon Web Services (Mechanical Turk), Qualtrics

Bash shell programming, Python, MATLAB, Javascript, R, SPSS