

# LEONARD FAUL

Center for Cognitive Neuroscience  
Duke University, Levine Science Research Center  
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## EDUCATION

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

## HONORS AND AWARDS

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2021	Charles Lafitte Graduate Research Award, Duke University
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

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- 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.
- Huang, S.\* , **Faul, L.\*** , Sevinc, G., Mwilambwe-Tshilobo, L., Setton, R., Lockrow, A., Ebner, N., Turner, G.R., Spreng, R.N. & De Brigard, F. (Under Review). Age Differences in Intuitive Moral Decision-Making: Associations with Inter-Network Neural Connectivity. \*co-first authors
- Faul, L.**, & LaBar, K. S. (In Prep). Mood-Congruent Memory Revisited
- Faul, L.**, De Brigard, F. (In Prep). The Moderating Effects of Nostalgia on Mood and Optimism During the COVID-19 Pandemic.

### SELECTED TALKS AND POSTER PRESENTATIONS

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- Faul, L.**, Stivers, J.M., Stjepanovic, D., Stewart, G.W., Graner, J.L., Morey, R.A., & LaBar, K.S. (2021). *Proximal threats promote enhanced acquisition and persistence of reactive fear circuits*. Paper presentation for the European Meeting on Human Fear Conditioning, Virtual
- Wright, R.N., **Faul, L.**, Graner, J.L., Stewart, G.W., LaBar, K.S. (2021). *Psychosocial Determinants of Anxiety About the COVID-19 Pandemic*. Society for Affective Science, Virtual

- Huang, S.\*, **Faul, L.\***, Sevinc, G., Mwilambwe-Tshilobo, L., Setton, R., Lockrow, A., Ebner, N., Turner, G.R., Spreng, R.N. & De Brigard, F. (2021). *Age Differences in Intuitive Moral Decision-Making: Associations with Inter-Network Neural Connectivity*. Cognitive Neuroscience Society, Virtual
- 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*. Social and Affective Neuroscience Society, 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*. Cognitive Neuroscience Society, 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, 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*. Society for Neuroscience, 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*. 3<sup>rd</sup> 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*. Cognitive Neuroscience Society, San Francisco, CA.
- Faul, L.**, Mattingly, K.M., Depue, B.E. (2016). *The Relationship Between Body Mass, Cognitive Functioning, and Brain Morphometry*. Research!Louisville, University of Louisville, Louisville, KY.
- Faul, L.**, Mattingly, K.M., Depue, B.E. (2016). *Neuroanatomy Underlying Cognitive, Psychological and Physical Behavior*. Summer Research Opportunity Program, 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

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### Duke University

- 2018 - present                      **LaBar Lab, Dr. Kevin LaBar**  
 Graduate Student  
 Topics: *fear conditioning; emotion regulation; depression; stress and reward; emotional memory; mood-congruent memory; emotion experience*
- 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

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- 2020 – 2021                      Aisha Greene  
Independent Research Student  
Topic: *Neuroimaging meta-analysis on counterfactual thinking*
- 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  
Independent Research Student; CNAP Graduate 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

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- Spring 2021                      PSY 212: Forensic Psychology  
Teaching Assistant for Dr. John Blackshear
- Guest lectured on false memory and eyewitness testimony
- 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
- Summer 2019                      Teaching Assistant Workshop  
Duke University Psychology and Neuroscience

Summer 2019 Duke Neuro Camp Instructor  
*Lectured on the basics of MRI data acquisition and analysis. Provided a demo at the Duke scanning center.*

## SERVICE

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2018 – 2019 Duke Center for Cognitive Neuroscience Journal Club  
*Organizer*

2018 Duke Institute for Brain Sciences (DIBS) Discovery Day  
*Volunteer*

2018 – 2019 Cognitive Neuroscience Admitting Program  
*Recruitment Volunteer Coordinator*

## PAST AND PRESENT PROFESSIONAL AFFILIATIONS

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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

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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)

Mechanical Turk, Prolific, Qualtrics

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