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LEONARD FAUL

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

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| 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

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| 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. Heurman 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.*, Stjepanovic, D.*, Stivers, J.M., Stewart, G.W., Graner, J.L., Morey, R.A., & LaBar, K.S. (Under Review). Proximal threats promote enhanced acquisition and persistence of reactive fear learning circuits. *co-first authors

Faul, L., St. Jacques, P.L, DeRosa, J.T., Parikh, N., De Brigard, F. (Under Review). Differential contribution of dorsomedial prefrontal and posterior parietal cortices during counterfactual and perspective shifts of episodic autobiographical memories.

Faul, L., & LaBar, K. S. (Under Review). 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.*, Knight, L.K.*, Depue, B.E., Jacob, A.E., Kaelin, D.L., Espay, A.J., & LaFaver, K. (In Prep) Neural activity changes after inpatient rehabilitation for functional movement disorders. *co-first authors

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.

SELECTED TALKS AND PRESENTATIONS

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

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

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| 2018 - present | <p>LaBar Lab
 Graduate Student
 Advisor: Dr. Kevin LaBar
 Topics: <i>fear and proximity; emotion regulation; stress and reward; emotional memory; mood-congruent memory</i></p> |
| 2018 - present | <p>Imagination and Modal Cognition Lab
 Graduate Student
 Advisor: Dr. Felipe De Brigard
 Topics: <i>memory modification; counterfactual thinking; perspective shift; autobiographical memory; morality</i></p> |
| 2017 – 2018 | <p>Egner Lab
 CNAP Rotation Student
 Advisor: Dr. Tobias Egner
 Topics: <i>inhibitory control; emotional interference</i></p> |

University of Louisville

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

MENTORING EXPERIENCE

- 09/2019 – present Jason Zhang
Independent Research Student
Topic: *Understanding depression through the relationship between stress, serotonin function, and dopamine*
- 05/2019 – present Sarah Haurin
Independent Research Student
2019 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

TEACHING EXPERIENCE

- 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

CURRENT/PAST 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/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 structure
- White matter structural integrity

Analysis of electrodermal data (event-related skin conductance)

Amazon Web Services (Mechanical Turk), Qualtrics

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