Lauryn Burleigh, M.A.

Lburleigh09@gmail.com | www.betweenthelobes.com | www.linkedin.com/in/lburleigh/ |
https://scholar.google.com/citations?user=5pQrpQIAAAAJ&hl=en

Education

PH.D. CANDIDATE | CURRENT | LOUISIANA STATE UNIVERSITY

· Major: Cognitive and Brain Sciences
· Advisor: Chris Cox, PhD
· Dissertation Title (in progress): Mental Imagery and Fear: A multi-component examination based on behavioral, physiological, and neurological measures
· Expected completion: May 2022

MASTER OF ARTS | MAY 2019 | LOUISIANA STATE UNIVERSITY

· Major: Cognitive and Brain Sciences
· Advisor: Steven Greening, PhD
· Thesis Title: The generalization of fear condition between viewed and imagined percepts

BACHELOR OF SCIENCE | DECEMBER 2014 | UNIVERSITY OF NEW ORLEANS

· Major: Psychology
· **Cum Laude**: 3.6 GPA
· Recipient of the Magnolia Louisiana Transfer Scholarship
· Recipient of the TOPS Honors Scholarship

Research Experience

GRADUATE RESEARCHER | REPRESENTATIONS AND LEARNING (RELEARN) LAB | AUGUST 2020 – CURRENT

PI: Chris Cox, PhD

· Designed, published, and presented a machine learning research project using fMRI data from multiple studies to inform a model (i.e., transfer learning)
· Aid in fMRI study implementation
· Mentor undergraduate research assistants
· Aid in data organization procedures
· Give feedback regarding research being conducted and to be conducted in the lab
· Continue progressing established research and managing multiple studies to publication

GRADUATE RESEARCHER | COGNITIVE NEUROSCIENCE OF AFFECT AND PSYCHOPATHOLOGY (CNAPS) LAB | AUGUST 2016 – CURRENT

PI: Steven Greening, PhD

- Designed, presented, and published research projects investigating human emotion and cognition (e.g., emotion acquisition, learning, perception)
- Collected and analyzed outcome measures spanning across subjective, behavioral, physiological, and neuroimaging indices
- Published research findings in scientific journals
- Presented in national and international conferences
- Create and support IRB applications and approvals
- Create Standard Operating Procedure guides, and scripts to organize and analyze data
- Run participants on tasks using subjective questionnaires, Biopac (GSR, mild electrical stimulation), GazePoint (eye tracking, pupillometry), and fMRI
- Mentor undergraduate honors thesis projects
- Manage multiple research projects simultaneously with a track record of timely completion

UNDERGRADUATE RESEARCH ASSISTANT | STRESS, COGNITION AND AFFECTIVE NEUROSCIENCE (SCAN) LAB | SEPTEMBER 2013 – DECEMBER 2015
PI: Elliott Beaton, PhD

- Work with children and their families affected by 22q11.2 deletion syndrome
- Designed and presented research projects investigating human cognition (e.g., navigation, learning)
- Operate Biopac equipment and data collection using AcqKnowledge software
- Trace brain regions of interest on fMRI scans
- Train lab members and undergraduates on data entry and working with fMRI scans and structures
- Data management
- Create Access database using Visual Basic coding
- Attended the Mind Research Network fMRI Image Acquisition and Analysis course at the University of New Mexico

UNDERGRADUATE RESEARCH ASSISTANT | LAHOSTE LAB | AUGUST 2013 – MAY 2014
PI: Gerald LaHoste, PhD

- Execute T-Maze and Morris Water Maze with mice
- Perform animal maintenance and preparation (e.g., injections, tail clipping, ear punches)

Teaching Experience

PSYC 2016 | COGNITIVE NEUROSCIENCE | SPRING 2022
- Professor: Eric Wilkey, PhD
- Role: Teaching Assistant
    - Assist in preparation and presentation of materials
    - Track progress and grades of undergraduate and graduate students

PSYC 7111 | ADVANCED STATISTICS | SPRING 2021
· Professor: Paul Soto, PhD
· Role: Teaching Assistant
  o Track progress and grades of students
  o Assist students in understanding the statistical material

PSYC 4111 | INTERMEDIATE STATISTICS | FALL 2020, FALL 2021
· Professor: Chris Cox, PhD
· Role: Teaching Assistant
  o Design and present weekly labs
  o Teach undergraduate and graduate students to run and understand statistical tests and visualizations using R
  o Track progress, grades, and needs of students
  o Assist students in understanding of the statistics material

PSYC 2016 | STATISTICS FOR THE BEHAVIORAL SCIENCES | FALL 2019, SPRING 2020
· Professor: Janet McDonald, PhD
· Role: Teaching Assistant
  o Give weekly review of material discussed in lecture
  o Teach undergraduate students to run and understand statistical tests and visualizations using SPSS
  o Track progress, grades, and needs of students
  o Assist students in understanding of statistics

Work Experience

MENTAL HEALTH TECHNICIAN | MMO WEST END INPATIENT PSYCHIATRIC UNIT | MAY 2013 – AUGUST 2013
· Responsible for patient safety and maintenance of the therapeutic environment
· Observe and report patient behavior
· Assist in development of treatment plans
· Identify, stabilize, and resolve potential crisis situations
· Implement and supervise patient activities
· Assist in maintenance of all special precautions with suicidal, homicidal, and elopement risk patients

Publications

Google Scholar: https://scholar.google.com/citations?user=5pQrpQIAAAAJ&hl=en

ORCID: https://orcid.org/0000-0002-6148-3769

ResearchGate: https://www.researchgate.net/profile/Lauryn-Burleigh-3

- **Burleigh, L.,** Greening, S.G., Zhou, S., Lu, H., & Cox, C.R. (In Preparation). Power to the Neuroscientists: Using Domain Adaptation Transfer Learning to Inform fMRI Models Investigating Mental Imagery and Emotion
- **Burleigh, L.**, & Greening, S.G. (Submitted). Fear in the mind's eye: The neural correlates of differential fear conditioning to imagined conditioned stimuli. *Journal of Cognitive Neuroscience.*
- **Burleigh, L.,** Jiang, X., & Greening, S. (In Review). Fear in the theatre of the mind: Mental imagery of conditioned stimuli undergo the acquisition and generalization of differential fear conditioning. https://psyarxiv.com/7jnbu/
- Greening, S.G., Lee, TH., **Burleigh, L.,** Gregoire, L, Robinson, T., Jiang, X., ... & Kaplan, J. (2022) Mental imagery can generate and regulate acquired differential fear conditioned reactivity. *Sci Rep* **12,** 997 (2022). https://doi.org/10.1038/s41598-022-05019-y
- Jiang, X., **Burleigh, L. M.,** & Greening, S. (2021). Complete the triangulation: Quantifying differential fear conditioning with noninterfering and sensitive behavioral measure along with self-report and physiological measures. Psychophysiology. 2021 Aug;58(8):e13831. doi: 10.1111/psyp.13831. Epub 2021 May 1. PMID: 33932035.
- Moen, K.C., Beck, M.R., Saltzmann, S.M., Cowan, T.M., **Burleigh, L.M.**, Butler, L.G., Ramanujam, J., Cohen, A.S., Greening, S.G. (2020). Strengthening spatial reasoning: Elucidating the attentional and neural mechanisms associated with mental rotation skill development*. Cognitive Research: Principles and Implications*., 5(1), 1-23
- **Burleigh, L. M.** (2019). *The Generalization of Fear Condition Between Viewed and Imagined Percepts. LSU Master's Theses.* 4904. https://digitalcommons.lsu.edu/gradschool_theses/4904.

Presentations

- **Burleigh, L. M.** (2021 February). Neural mechanisms of internal and external emotion elicitation: A systematic review.
- Chaisson, F. M., **Burleigh, L. M.,** Greening, S. G., Lucas, H. D. (2020 May). *ERP Investigation of the effects of acute stress on memory formation and judgments of learning (JOLs).* Poster presented virtually at Cognitive Neuroscience Society.
- **Burleigh, L. M.**, Owens-French, Joshua, Chaisson, Felicia, Madden, Anna, Jiang, Xinrui, Raggio, Lauren, Greening, S. G. (2019 October). *Fear Conditioning to imagined percepts and its relationship to standard visual conditioning.* Poster presented at Society for Neuroscience in Chicago, Illinois
- **Burleigh, L. M.**, Owens-French, Joshua, Chaisson, Felicia, Madden, Anna, Raggio, Lauren, Greening, S. G. (2019 May). *The Generalization of Fear Condition Between Viewed and Imagined Percepts.* Poster and Flash Talk presented at Brain Produces Mind by Modeling in Irvine, California
- **Burleigh, L. M.** (2019) The Generalization of Fear Condition Between Viewed and Imagined Percepts. Master's Thesis Defense.
- **Burleigh, L. M.**, Greening, S. G. (2019 February). *The Generalization of Fear Condition Between Viewed and Imagined Percepts.* Presentation at Brown Bag Baton Rouge, Louisiana
- **Burleigh, L. M**., Owens-French, Joshua, Chaisson, Felicia, Madden, Anna, Raggio, Lauren, Greening, S. G. (2018 November). *Fear in the Theatre of the Mind: Elucidating the Neural Mechanisms of Fear Generalization from Imagined to Viewed Percepts.* Poster presented at Society for Neuroscience in San Deigo, California.

- **Burleigh, L. M.**, Greening, S. G. (2018 April). *Fear in the Theatre of the Mind: The Generalization of Fear Condition Between Viewed and Imagined Percepts.* Poster presented at Society for Affective Science in Los Angeles, California.
- **Burleigh, L. M.**, Greening, S. G. (2018 March). *The Generalization of Fear Condition Between Viewed and Imagined Percepts: An fMRI Study.* Presentation at Brown Bag Baton Rouge, Louisiana
- Greening, S. G., Moen, K. C., Saltzmann, S., **Burleigh, L. M.**, Butler, L., Ramanujam, J., Cohen, A., Beck, M. (2018 March). *Optimizing STEM Skills: A Baseline Assessment of the Neural Correlates of Mental Rotation.* Poster presented at Cognitive Neuroscience Society in Boston, Massachuettes.
- **Burleigh, L. M.** (2017 May). *Fear Conditioning in the Theatre of the Mind.* Presentation at Brown Bag Baton Rouge, Louisiana
- **Burleigh, L. M.**, Greening, S. G. (2017 October). *Fear in the Theatre of the Mind: The Generalization of Fear Condition Between Viewed and Imagined Percepts.* Poster presented at ARMADILLO in College Station, Texas.
- **Burleigh, L. M.** (2016 December). *Fear Conditioning in the Theatre of the Mind.* Presentation at Brown Bag Baton Rouge, Louisiana
- Sanders, A. F. P., Stephenson, D. D., Hobbs, D. A., **Burleigh, L. M.**, Bacigalupi, R. B., Beaton, E. A. (2016). *Anxiety Mediates Working Memory Impairments in Children with Chromosome 22q11.2 Deletion Syndrome.* Poster presented at Biological Psychiatry

Awards
- 2019 LSU Graduate Student Travel Award. Society for Neuroscience in Chicago, IL ($600)
- 2019 Brain Produces Mind by Modeling Colloquia Travel Award. ($1,000)
- 2018 LSU Graduate Student Travel Award. Society for Neuroscience in San Deigo, CA ($600)
- 2018 LSU Graduate Student Travel Award. Society for Affective Science in Los Angeles, CA ($600)
- 2018 NSF Graduate Research Fellowship Program (unsuccessful). "*The Generalization of Fear Condition Between Viewed and Imagined Percepts: An fMRI Study*"
- 2017 LSU Graduate Student Travel Award. ARMADILLO in College Station, TX. ($600)
- 2016 NSF Graduate Research Fellowship Program (unsuccessful). *"Arousal Biased Memory in Anxiety Using Virtual Morris Water Maze"*

Volunteer Community Outreach
- Created and ran **weekly labs** to teach undergraduate and graduate Statistics students how to handle data and run analyses in R (Fall 2020)
- Ran **workshop** to teach graduate students how to use R (Spring 2017)
- Demonstrated computer-based brain imaging techniques and guided/answered questions about the brain with children at the **Science, Technology, Engineering, and Mathematics (STEM) Education Day at Zephyr Field** (April 2015)
- Described and showed the use of neuro- and bio-feedback in physical tasks, and directed children in hands-on tasks modeling neurological measures at the **2015 Chevron Science, Technology, Engineering, and Mathematics (STEM) Zone at the Zurich Classic** (April 2015)

- Examined biological science research projects of middle school students and discussed options for improving each study as well as future research methods as a **judge for Greater New Orleans Science and Engineering Fair (GNOSEF)** (February 2015)
- Demonstrated computer-based brain imaging techniques to girls ages 5-12 and guided question and answer period about brain science at the **2014 Girl Scouts of Louisiana Science, Technology, Engineering, and Mathematics (STEM) conference** (June 2014)
- Directed question and answer period about working in a research lab as an undergraduate and discussed the benefits to furthering education through scientific research as a **peer mentor at the University of New Orleans Privateer Plunge Science Talk** (September 2014)

Skills

- Bash/Linux
- Bayesian Statistics
- Biopac - AcqKnowledge
- Database management
- E-Prime
- Excel and Microsoft Office software
- Experimental design
- Fsl
- Gazepoint
- Gimp
- ITK Snap
- LaTex
- Machine Learning
- Mango
- MATLAB
- Mazesuite
- Modelling analyses
- MRI and fMRI pre-processing and analysis
- Null Hypothesis Statistics Testing
- Psychtoolbox
- Python
- R
- SPM
- SPSS
- Ubuntu