

Sadie Hearn née Villarrubia

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Skills

- Microsoft Excel
- Microsoft SQL Server
- Tableau Public
- Microsoft Power BI
- Python (Pandas, Matplotlib)
- MathWorks MATLAB
- Microsoft Word
- Technical Writing
- Communication

Work Experience

Professional Development-Preparing for New Opportunities

June 2021-Present

- Continue collaboration with former coworkers to review literature, publish research, and manage and analyze data using Microsoft Excel and Google applications
- Practice utilization of Microsoft SQL Server, Microsoft Excel, Tableau Public, Microsoft Power BI, and Python for data analysis, including data cleaning, data exploration, data visualization, dashboard creation, and managing database relationships

Louisiana Tech University

January 2019-June 2021

- Lab Manager
July 2020-June 2021
 - Input and manage data regarding test subjects and pharmaceutical drug usage
 - Delegate, train, and assist other undergraduate students in lab assistant responsibilities
 - Surgically implant intracranial electroencephalogram (iEEG) electrodes in rats
 - Coordinate with students and members of other labs to collaborate on experiments
 - Document protocols and procedures
- Lab Assistant
January 2019-July 2020
 - Measure neurotransmitter fluctuations, use MATLAB to extract, model, and analyze data, compare data to observed seizure behaviors, and perform pairwise t-tests to determine statistical significance between mean fluctuations
 - Perform cardiac perfusions, tissue collection, and histological studies in rat tissues

Education

Louisiana Tech University, Bachelor of Science

Major: Biomedical Engineering

Graduated: May 2021

Minors: Mathematics, Electrical Engineering

Grade Point Average: 3.81, Magna Cum Laude

Special Projects:

- Code with MATLAB software to process, model, and analyze biological systems and signals
- Perform statistical analysis of data sets including identifying variances, distributions, regressions, and correlations, hypothesis testing, and making inferences about populations
- Code with MATLAB software to employ numerical analysis techniques

Achievements:

- Cengiz Topakoglu Outstanding Biomedical Engineering Student Scholarship: 2021
- Janine Svigel Lotz Scholarship: 2020
- Center for Biomedical Engineering and Rehabilitation Sciences Research Scholarship: 2020
- Sophomore Fast-Forward Scholarship Program: June 2018- August 2018

Publications and Presentations

- Holly, KS, Kumler, AC, Dhungel, P, Rudrashetty, S, Villarrubia, SA, Merten, JE, et al. Automated rodent sleep spindle detector: MATLAB app using two complementary search algorithms. Research Square. Preprint. 2023.<https://doi.org/10.21203/rs.3.rs-3523866/v1>. Scientific Reports. Under Review.
- Merten, JE, Villarrubia, SA, Holly, KS, Kemp, AS, Kumler, AC, Larson-Prior, LJ, et al. The use of rodent models to better characterize the relationship among epilepsy, sleep, and memory. *Epilepsia*. 2022; 63: 525–536. doi:10.1111/epi.17161
- Villarrubia, SA, Ponder, K, Doughty, PT, Tan, C, Siddiqui, S, Arumugam, PU, et al. In vivo detection of rapid fluctuations in glutamate concentrations associated with seizure behaviors. Research Experience for Undergraduates Neuronal Networks in Epilepsy and Memory (NeuroNEM). August 2019. Biomedical Engineering Society Annual Meeting. October 2019.