Hannah **Bowley**

Data Scientist

Miami, FL

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Data Scientist and Organizational Strategist skilled in biostatistics, R programming and data visualization

Education

Bachelor of Science- Psychology

Tallahassee, FL

Florida State University

2018

Master of Public Health- Biostatistics

Miami, FL

Florida International University

2022

Professional Experience

Research Coordinator

Miami, FL

Florida International University- Project on Language and Spatial Development

February 2020 - Present

- Project Seahorse (Spatial Expertise and Hippocampal Regional Structure) Study - examining the relationship between individual differences in hippocampal structure and functioning to individual differences in children's spatial ability.
  - Longitudinal and cross- sectional data Analysis, management and dissemination of findings at conferences
  - Managed project operations for R01 grant, including writing and amending IRB protocols, grant related progress reports and managing budget.
  - Conducted community outreach and oversaw participant recruitment, scheduling and completion of study visits, including neuroimaging visits, behavioral data collection and parent- child interviews.
  - Trained and completed quality control checks on structural MRI data using the software Freesurfer
  - Completed hippocampal ROI tracing and segmentation using the software AFNI
  - Oversaw and trained a team of research assistants

Teaching Fellow

Remote

Research Center for Minority Institutions (RCMI) Consortium

October 2022 - Present

- Data Science instructor of R programming Language using R for Reproducible Scientific Analysis Data Carpentry curriculum

Biostatistics Practicum

Miami, FL

Florida International University- Developmental Cognitive Neuroscience Laboratory

May 2022 - Present

- Adolescent Brain Cognitive Development Study (ABCD) Substudy- Effects of Stimulant Medication on Brain Development
  - Created R scripts to accomplish missing data analysis, propensity matching, and multi-level modeling of effects of medication status on diffusion- weighted imaging metrics
  - Developed procedures to check and validate data accuracy as well as wrote scripts to graphically summarize results

Research Assistant

Miami, FL

Florida International University- Substance Use and Neuropsychology Lab

August 2018 - February 2020

- Adolescent Brain Cognitive Deevelopment (ABCD) Study- Nationwide longitudinal study focused on the brain, emotional, social, and cognitive development of children to predict future outcomes
  - Ran child protocol for the ABCD study which includes neuropsychological assessments (e.g., Q-Interactive and NIH Toolbox)
  - Administered structured clinical interviews for parents and children in English and Spanish (e.g., KsADS, medication inventories)
  - Assisted in scheduling participating families for follow up visits (e.g., phone calls, emails, and text messages)
  - Aided in organizing materials for biospecimen collection including hair, saliva and blood samples
  - Worked with electronic data entry systems, managed lab website and Fitbit database

Research Assistant

Miami, FL

Florida International University- Program for Attention Learning and Memory Lab

February 2019 - February 2020

- Ongoing projects in the lab focused on Neurocognition in children with ADHD and how that understanding can lead to improved treatment methods
  - Assisted in cognitive appointments with children with an ADHD diagnosis and typically developing children
  - Worked with electronic data systems (e.g., REDcap, Sharepoint) and completed tasks involving physiological data cleaning and study analysis (e.g., Actigraphy, MindWare HRV, FaceReader, The Observer)
  - Administered and scored the Peabody Picture Vocabulary Test (PPVT) and the Test de Vocabulario en Imagines (TVIP) to children

Research Assistant

Miami, FL

Florida International University- Neuroinformatics and Brain Connectivity Lab

September 2018 - December 2019

- Habenula Project: Examining the functional connectiviity of the Habenula
  - Used the software Mango for ROI tracing of the habenula in over 150 subjects using data from the Human Connectome Project
  - Performed quality control checks on functional MRI data from the ABCD study
  - Assisted in recruitment for Social and Emotional Aspsects of Academic Success (SEAAS Project)

Research Assistant

Tallahassee, FL

Florida State University- Wilber Lab

August 2017 - August 2018

- Ongoing projects in the lab focus on spatial orientation and navigations using rodent models
  - Assisted in behavioral data collection for a project examining spatial sequence learning and its relation to the parietal cortex
  - Aided in infusions of muscimol and saline in rodents and observed brain extractions and perfusions
  - Employed matlab for data analysis (e.g. spike sorting/unsorting)
  - Created the website for the lab using Drupal and used Adobe Illustrator and Photoshop to create schematics for grant proposals and presentations

Presentations

1. Bowley, H, Wu, Y, Lioi, P, Vieites, V, Ralph, Y, Rengel, M, Renfro, A, Hayes, T, Dick, A.S, Mattfeld, A, & Pruden, S.M. (2023). *Exploring Individual and Sex Differences in Trace Eyeblink Conditioning (EBC) in 4- to 6- year olds*.
2. Wu, Y, Bowley, H, Lioi, P, Ralph, Y, Vieites, V, Rengel, M, Renfro, A, Hayes, T, Dick, A.S, Mattfeld, A, & Pruden, S.M. (2023). *The Association between Working Memory, Inhibitory Control, and Spatial Ability in 4- to 6- year-olds*.
3. Hall, L, Rengel, M, Bowley, H, Alvarez-Vargas, D, Abad, C, Overton, D, & Pruden, S.M. (2022). *Quantity and quality of parent-child spatial talk: The roles of prosocial talk and negative talk*.
4. Hall, L, Rengel, M, Bowley, H, Overton, D, Alvarez-Vargas, D, Abad, C, & Pruden, S.M. (2022). *Prosocial Talk During Collaborative Block Building Predicts Quantity of Spatial Language Production*.
5. Overton, D, Hall, L, Rengel, M, Bowley, H, Alvarez-Vargas, D, Abad, C, & Pruden, S.M. (2022). *Parent and child math language and relations to child spatial ability*.
6. Garcia, N, Rengel, M, Bowley, H, & Pruden, S.M. (2021). *Factors that Influence Mother- Child Spatial Play*.
7. Dick, A.S, Vieites, V, Renfro, A, Bowley, H, Rengel, M, Hayes, T, Mattfeld, A, Reeb-Sutherland, B, & Pruden, S.M. (2020). *Relation between hippocampal neurite density and trace eyeblink conditioning in four-to-six-year-old children.*
8. Hall, L, Rengel, M, Bowley, H, Hernandez, D, Giles, L, & Pruden, S.M. (2020). *A Novel Approach for Spatial Language Analysis: A supervised Machine Learning Algorithm*.
9. Bruce, N, Simmons, C.M, Bowley, H, Kirlan, M, Crafton, B, Pei, E, Baiamonte, M, & Wilber, A. A. (2018). *Inactivation of the Parietal Cortex and its effect on sequence learning*.
10. Simmons, C.M, Bowley, H, Kirlan, M, Baiamonte, M, & Wilber, A. A. (2018). *Pariteal contributions to context dependent spatial sequence learning*.

Publications

1. Hall, L. V., Rengel, M., Bowley, H., Alvarez-Vargas, D., Abad, C., Overton, D., & Pruden, S. M. (2022). *"You did a great job building that!" Links between parent-child prosocial talk and spatial language*. PsyArXiv. `https://doi.org/10.31234/osf.io/yua6h`

Skills

Programming Languages

R, Python, SAS, SQL

Software

STATA, SPSS, Microsoft Office Suite, RedCap, Qualtrics

Reproducible Report

Quarto, Markdown, LaTex, Jupyter Notebooks

Languages

English, Spanish