

# 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

FLORIDA STATE UNIVERSITY

Tallahassee, FL

2018

### Master of Public Health- Biostatistics

FLORIDA INTERNATIONAL UNIVERSITY

Miami, FL

2022

## Professional Experience

### Research Coordinator

FLORIDA INTERNATIONAL UNIVERSITY- PROJECT ON LANGUAGE AND SPATIAL DEVELOPMENT

Miami, FL

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, included 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

RESEARCH CENTER FOR MINORITY INSTITUTIONS (RCMI) CONSORTIUM

Remote

October 2022 - Present

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

### Biostatistics Practicum

FLORIDA INTERNATIONAL UNIVERSITY- DEVELOPMENTAL COGNITIVE NEUROSCIENCE LABORATORY

Miami, FL

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

FLORIDA INTERNATIONAL UNIVERSITY- SUBSTANCE USE AND NEUROPSYCHOLOGY LAB

Miami, FL

August 2018 - February 2020

- Adolescent Brain Cognitive Development (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

FLORIDA INTERNATIONAL UNIVERSITY- PROGRAM FOR ATTENTION LEARNING AND MEMORY LAB

Miami, FL

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 Imágenes (TVIP) to children

## Research Assistant

Miami, FL

FLORIDA INTERNATIONAL UNIVERSITY- NEUROINFORMATICS AND BRAIN CONNECTIVITY LAB

September 2018 - December 2019

- Habenula Project: Examining the functional connectivity 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 Aspects 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, Kirilan, 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, Kirilan, 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