

John C. Flournoy, PhD

Principal Research Scientist, Stats Maven

Education

Ph.D., Psychology, University of Oregon, 2018

M.S., Psychology, University of Oregon, 2014

B.A., Cognitive Science, University of California at Berkeley, 2005

Research

Developer Success Lab, Pluralsight — *Principal Research Scientist*

2020 - 2024 (Postdoctoral Fellow, 2018-2020)

- Lead scientist on analysis of yearly ticket data from over 11k developers
- Drove organizational insights across multiple research projects
- Spearheaded community engagement overlay journal at dsl.pubpub.org.

Harvard University, Cambridge, MA — *Research Associate*

2020 - 2024 (Postdoctoral Fellow, 2018-2020)

- Lead analyst on intensive longitudinal fMRI neuroimaging study of mechanisms linking stress to psychopathology in adolescents.
- Lead author of report on fMRI measurement reliability.
- Supported co-authors on intensive longitudinal digital phenotyping analysis of stress, sleep, digital communication, and physical activity on three additional publications.
- Lead analyst of task-based fMRI for multi-site study of typical adolescent development of cognitive control and reward sensitivity (NIMH grant U01-MH109589; \$17,141,357).
- Developed digital phenotyping data processing and analysis pipeline for in-progress NIMH grant R37-MH119194 (\$9,034,169)
- Provide methodology and scientific computing support to 8 graduate students, 15 post-bac RAs, and 9 post-docs, across 2 lab groups
- International collaboration.

University of Oregon, Eugene, OR — *Graduate Research Fellow*

2012 - 2018

- Developed hierarchical Bayesian model of reinforcement learning to examine adolescent social motives as proximal causes of health risking behavior.
- Collected data from more than 300 participants including foster-care-involved adolescents with a team of research assistants. \
- Dissertation: [Adolescent Social Motives: Measurement and Implications](#).
- Developed expertise in longitudinal collection and analysis of personality, fMRI, and cognitive/behavioral task data using multilevel modeling and structural equation modeling.
- Validated new self report and task measures, and evaluated validity and

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🌐 [Google Scholar](#)

📄 in/johnflournoy

Skills

- Autodidact
- Bayesian modeling
- Causal inference
- Collaborative science
- Containerized workflows
- Git and GitHub
- Human subjects research
- Machine learning
- Missing data
- Multilevel modeling
- Parallelization
- Psychometrics
- R, Stan, Python, SQL
- Research design
- Structural Equation Modeling
- Transparent and open science
- Visualization of data analysis

Awards

The Sackler Scholar Programme in Psychobiology Research Grant, 2019

Gary E. Smith Summer Professional Development Award, 2015

Clarence and Lucille Dunbar Scholarship , 2014

R Packages

[riclpmr](#): generate syntax for random intercept cross-lag panel models.

[curvish](#): (alpha) Bayesian analysis and visualization of GAM smooths using 1st and 2nd derivatives.

[scorequaltrics](#): retrieve and score data from Qualtrics using csv templates.

reliability of existing measures.

Stanford University, Stanford, CA — *Research Coordinator*
2009 - 2012

- Coordinated Simons Foundation-funded study examining link between sleep problems and symptoms in autism spectrum disorder using ambulatory polysomnography.
- Site coordinator for a registered clinical trial of the efficacy of a novel PET marker of cerebral β -amyloid in patients with dementia.

Selected Publications

See [google scholar](#) for the full list of more than 25 peer-reviewed articles

Flournoy, J. C., Bryce, N. V., Dennison, M. J., Rodman, A. M., McNeilly, E. A., Lurie, L. A., ... & McLaughlin, K. A. (2024). A precision neuroscience approach to estimating reliability of neural responses during emotion processing: Implications for task-fMRI. *NeuroImage*, 285, 120503.

Bryce, N., **Flournoy, J.C.**, Moreira, J. F. G., Rosen, M. L., Sambook, K. A., Mair, P., & McLaughlin, K. A. (2021). Brain parcellation selection: An overlooked decision point with meaningful effects on individual differences in resting-state functional connectivity. *NeuroImage*, 118487.

Flournoy, J. C., Vijayakumar, N., Cheng, T. W., Cosme, D., Flannery, J. E., & Pfeifer, J. H. (2020). Improving practices and inferences in developmental cognitive neuroscience. *Developmental cognitive neuroscience*, 100807.

Ludwig, R. M., **Flournoy, J. C.**, & Berkman, E. T. (2019). Inequality in personality and temporal discounting across socioeconomic status? Assessing the evidence. *Journal of research in personality*, 81, 79-87.

Matta, T. H., **Flournoy, J. C.**, & Byrne, M. L. (2018). Making an unknown unknown a known unknown: Missing data in longitudinal neuroimaging studies. *Developmental cognitive neuroscience*, 33, 83-98.

Selected Teaching & Talks

November, 2021. *Why and How to Care About Covariates in Longitudinal Data*. Presented at the 7th Annual UC Adolescence Consortium Institute.

July 2021. Instructor at [ABDC Workshop: Modeling Developmental Change](#) (online):

- Data science tools tutorials
- Structural Equation Modeling (SEM): Theory
- Structural Equation Modeling (SEM): Hands-on tutorial

May 2021. *Scientific Practice in Developmental Cognitive Neuroscience*. Presented at the Lifespan Informatics and Neuroimaging Center, Department of Psychiatry, University of Pennsylvania Perelman School of Medicine.

Special Training

Neurohackweek, 2016
· Python programming and neuroinformatics

ICPSR Summer Program in Quantitative Methods of Social Research, 2015

- Causal Inference for the Social Sciences
- Advanced Bayesian Models for the Social Sciences

May 2019. *Machine learning as a tool for diagnosis and theory testing.*

Presented as part of the Institute for Technology in Psychiatry Seminar Series, McLean Hospital, Boston, MA.