John C. Flournoy, PhD

Computational Research Scientist, Stats Maven

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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

Academic Appointments

- Associate of the Department of Psychology (Courtesy Appointment), Harvard University, 2024 - Present

Research

Research and Data Science Consultant, Independent

2018 - Present

- Clients have included Meru Health (digital mental health analyses), Harvard (HCPD neuroimaging), and academic teams seeking psychometric and causal inference expertise

Developer Success Lab, Pluralsight — *Principal Research Scientist*
2024 - 2025

- Lead scientist surfacing qualitative insights from infrastructure devs
- Lead scientist on analysis of yearly ticket data from over 11k developers
- Drove organizational insights across multiple research projects to remove barriers to learning and hone organizational strategy.
- 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 examining method reliability and reporting on mechanisms linking stress to psychopathology in adolescents.
- Designed intensive longitudinal digital phenotyping of stress, sleep, digital communication, and physical activity leading to 3 publications. NIMH grant R37-MH119194 ($9,034,169)
- Analyzed multi-site, longitudinal fMRI data of adolescent cognitive control and reward (NIMH grant U01-MH109589; $17,141,357).
- Provided methodology and scientific computing support to 8 graduate students, 15 post-bac RAs, and 9 post-docs, across 2 lab groups

University of Oregon, Eugene, OR — *Graduate Research Fellow*
2012 - 2018

- Developed hierarchical Bayesian model of reinforcement learning to examine adolescent social motives as causes of health risking behavior.
- Collected data from more than 300 participants including

Skills

- Autodidact
- Bayesian modeling
- Causal inference
- Collaborative science
- Cloud computing
- Data visualization
- Git and GitHub
- Human participants research
- Machine learning
- Missing data
- Multilevel modeling
- Psychometrics
- Qualitative Methods
- R, Stan, Python, SQL
- Research design
- Structural Equation Modeling
- Transparent and open science

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.

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

foster-care-involved adolescents with a team of research assistants.
- Analyzed longitudinal personality and fMRI task data using MLM & SEM.
- Validated new self report and task 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.
- 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., Lee, C. S., Wu, M., & Hicks, C. M. (2025). No Silver Bullets: Why Understanding Software Cycle Time is Messy, Not Magic (No. arXiv:2503.05040). *arXiv*. (Under review at *Empirical Software Engineering*)

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.

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.

Media

- Guest, The Stack Overflow Podcast (2025)
- Production Assistant, American Masters (PBS, 2005)