John C. Flournoy, PhD

Research Scientist

📲 (415) 260-2744
📧 johnflournoy@gmail.com
🌎 johnflournoy.science
🅛 in/johnflournoy

Education

Postdoctoral Fellow, Harvard University, 2018–2020
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

Harvard University, Cambridge, MA — *Research Scientist*
2020 - PRESENT (Postdoctoral Fellow, 2018-2020)

- Lead analyst on intensive longitudinal fMRI neuroimaging analysis of neural mechanisms linking stress to psychopathology in adolescents and providing insights reliability (see Notable Papers in Progress, below).
- Primary methodologist supporting intensive longitudinal digitial phenotyping analysis of stress, sleep, digital communication, and physical activity, yielding 3 peer reviewed publications to date.
- Lead analyst of task-based fMRI for multi-site study of typical adolescent development of cognitive control and reward sensitivity (Human Connectome Project - Development). Pathfinding innovative approach to fMRI analysis allowing the use of all available data.
- Provide methodology and scientific computing support to 8 graduate students, 15 post-bac RAs, and 9 post-docs, across 2 lab groups
- Collaborated independently with research teams in the US, Netherlands, Australia, and Switzerland.

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

- Focused on adolescent health and wellbeing. 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 reliability of existing measures.
- Developed analysis approaches that enabled multiple impactful research projects.

Skills

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

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

`curvish`: (in dev) analysis and visualization of GAM smooths using 1st and 2nd derivatives.

`riclpmr`: generate syntax for random intercept cross-lag panel models.

`scorequaltrics`: retrieve and score data from Qualtrics using csv templates.

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

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.

Thalmayer, A. G., Saucier, G., Srivastava, S., **Flournoy, J. C.**, & Costello, C. K. (2019). Ethics‐relevant values in adulthood: Longitudinal findings from the life and time study. *Journal of Personality*, 87(6), 1119-1135.

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

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.

Notable Papers in Progress

Flournoy, J.C., Dennison, M.J., Rodman, A.M., Bryce, N., McNeilly, E., Lurie, L., Bitran, D., Reid-Russell, A., Vidal-Bustamente, C.M., Allen, N.B.,Madhyastha, T., McLaughlin, K.A. *A Precision Neuroscience Approach to Mapping Within-Person Variability in Brain Activation During Emotion Processing: Implications for Reliability of Task-Based fMRI*.

Flournoy, J.C., Rakesh, D., Byrne, M.L. *Common Neuroimaging Exclusions Lead to Missing-Data Biases*.

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