Anthony J Barrows

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Education

PhD in Complex Systems and Data Science 2022–2026
University of Vermont, Burlington, Vermont
Dissertation: *Beyond mass univariate analyses in neuroimaging: Multivariate and multifaceted approaches to connecting brain and behavior in adolescence*

MS in Complex Systems and Data Science 2019–2021
University of Vermont, Burlington, Vermont

BA in Psychology 2013–2016
University of Hartford, Hartford, Connecticut
Honors Thesis: *Characteristics Associated with MMPI-2 L-scale Elevations in a Sample of Police Officer Candidates*

Experience

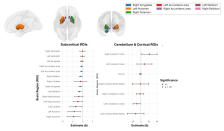
Teaching Fellow, ABCD-ReproNim Course 2025–2026
Writing Consultant, Graduate Writing Center 2023–2025
Program Representative, Graduate Student Senate 2023–2024

Postdoctoral Associate, Department of Psychiatry, University of Vermont 2026–present
NIH T32 Predoctoral Fellow, Neuroimaging REsearch VErmont (NERVE) Lab 2022–2026
Research Data Analyst, Vermont Center on Behavior and Health 2021–2022
Research Assistant, Vermont Center on Behavior and Health 2016–2021

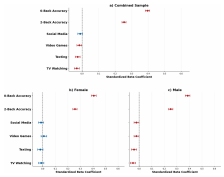
Awards

NEuroimaging Reserach VErmont (NERVE) Lab predoctoral fellow (T32 DA043593)
Harry L. Leonhard Award for Greatest Contribution to the Psychology Department by a Graduating Psychology Major

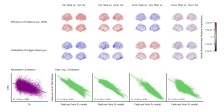
Publications



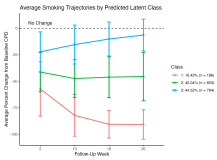
8. Morgan, H. L., Cioffredi, L.-A., Scoppettone, N., **Barrows, Anthony J.**, Lorenzo, N. E., Zhang, J., Garavan, H., and Potter, A. (2026). Early infant subcortical volume is associated with maternal prenatal depression. *Biological Psychiatry Global Open Science*, page 100859



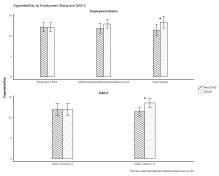
7. Arekatla, S., **Barrows, Anthony**, Cioffredi, L.-A., Albaugh, M. D., Allgaier, N., Allred, M., Baranger, D., Potter, A., Garavan, H. P., and Chaarani, B. (2026). Longitudinal associations between screen time activities and working memory neural signatures in adolescents: Sex differences and contextual moderation. *Developmental Cognitive Neuroscience*, 82:101836



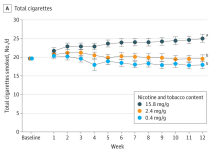
6. **Barrows, Anthony**, Weigard, A., McCabe, M., Potter, A., Garavan, H., and Allgaier, N. (2026b). Cognitive process models reveal meaningful brain–behavior associations in the adolescent brain cognitive development study stop-signal task. *Journal of Cognitive Neuroscience*, pages 1–13



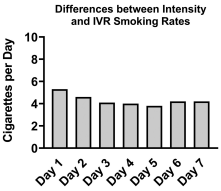
5. **Barrows, Anthony**, Klemperer, E., Garavan, H., Allgaier, N., Lindson, N., and Taylor, G. (2025b). Smoking reduction trajectories and their association with smoking cessation: A secondary analysis of longitudinal clinical trial data. *BMJ Public Health*, 3(2):e001605



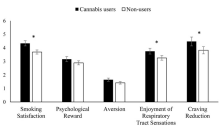
4. Wiley, R. C., Oliver, A. C., Snow, M. B., Bunn, J. Y., **Barrows, A. J.**, Tidey, J. W., Lee, D. C., Sigmon, S. C., Gaalema, D. E., Heil, S. H., Markesich, C., Villanti, A. C., and Higgins, S. T. (2022). The impact of the covid-19 pandemic on smoking among vulnerable populations. *Nicotine & Tobacco Research*, 25(2)



3. Higgins, S. T., Tidey, J. W., Sigmon, S. C., Heil, S. H., Gaalema, D. E., Lee, D., Hughes, J. R., Villanti, A. C., Bunn, J. Y., Davis, D. R., Bergeria, C. L., Streck, J. M., Parker, M. A., Miller, M. E., DeSarno, M., Priest, J. S., Cioe, P., MacLeod, D., **Barrows, A. J.**, Markesich, C., and Harfmann, R. F. (2020). Changes in cigarette consumption with reduced nicotine content cigarettes among smokers with psychiatric conditions or socioeconomic disadvantage. *JAMA Network Open*, 3(10):e2019311–e2019311



2. Nighbor, T. D., **Barrows, A. J.**, Bunn, J. Y., DeSarno, M. J., Oliver, A. C., Coleman, S. R. M., Davis, D. R., Streck, J. M., Reed, E. N., Reed, D. D., and Higgins, S. T. (2020). Comparing participant estimated demand intensity on the cigarette purchase task to consumption when usual-brand cigarettes were provided free. *Preventive Medicine*, 140



1. Parker, M. A., Streck, J. M., Bergeria, C. L., Bunn, J. Y., Gaalema, D. E., Davis, D. R., **Barrows, A. J.**, Sigmon, S. C., Tidey, J. W., Heil, S. H., and Higgins, S. T. (2018). Reduced nicotine content cigarettes and cannabis use in vulnerable populations. *Tobacco Regulatory Science*, 4(5):91–94

Invited Talks

1. **Barrows, Anthony** and Klemperer, E. (2026). Presentation of findings from barrows et al. (2025) (bmj public health 3(2)). Vermont Department of Health Tobacco Medicaid Benefit and Promotion Quarterly Meeting

Selected Talks

2. **Barrows, A. J.** (2023). Improving brain-behavior associations by strengthening models of behavior (talk). Adolescent Brain Cognitive Development (ABCD) Study 2023 Annual Meeting

1. Taylor, S., Garavan, H., Weigard, A., Ging-Jehli, N., Hitchcock, P., and **Barrows, A. J.** (2023). What can computational modeling reveal about the generality or specificity of neurocognitive risk factors for psychopathology? (panel presentation). American College of Neuropsychopharmacology 2023 Annual Meeting

Abstracts

8. **Barrows, Anthony**, Baranger, D. A. A., Arekatla, S., O'Connor, S., Allgaier, N., and Garavan, H. (2026a). Neural signatures help resolve individual differences using task fmri in the abcd study. University of Vermont 2026 Annual Neuroscience, Research, and Behavior Forum (Poster Presentation)

7. **Barrows, Anthony**, Garavan, H., Potter, A., Allgaier, N., and Albaugh, M. (2025a). Leveraging propensity score matching to test cannabis exposure effects in the abcd cohort. Flux Society Congress 2025, Dublin, Ireland (Poster Presentation)

6. **Barrows, Anthony**, Klemperer, E., Garavan, H., Allgaier, N., Lindson, N., and Taylor, G. (2024). Smoking reduction trajectories and their association with smoking cessation. Society for Research on Nicotine and Tobacco 2024 Annual Meeting (Poster Presentation)

5. **Barrows, A. J.**, Pearson, E., Chaarani, B., Garavan, H., and Allgaier, N. (2023). Longitudinal task activation differences for the mid task in the abcd study (poster presentation). Organization for Human Brain Mapping 2023 Annual Meeting

4. Wiley, R. C., Oliver, A. C., Bunn, J. Y., **Barrows, A. J.**, Tidey, J. W., Lee, D., Sigmon, S., Gaalema, D. E., Heil, S. H., Markesich, C., Villanti, A. C., and Higgins, S. T. (2020a). Urban and rural differences in smoking behavior among vulnerable populations during the covid-19 pandemic (poster presentation). 2020 Vermont Center on Behavior and Health Conference

3. Wiley, R. C., Oliver, A. C., Snow, M. B., Bunn, J. Y., **Barrows, A. J.**, Tidey, J. W., Lee, D., Sigmon, S., Gaalema, D. E., Heil, S. H., Markesich, C., Villanti, A. C., and Higgins, S. T. (2020b). Smoking behavior among vulnerable populations in response to the covid-19 pandemic (abstract). 2020 Tobacco Centers of Regulatory Science Grantee Meeting

2. Streck, J. M., Sigmon, S. C., Parker, M. A., Stitzer, M. L., Heil, S. H., Tidey, J. W., Gaalema, D. E., Bergeria, C. L., Davis, D. R., Priest, J., **Barrows, A. J.**, Rothman, M., Hughes, J. R., and Higgins, S. T. (2017). Subjective effects of smoking among opioid-maintained individuals - results from a trial examining reduced nicotine content cigarettes (abstract). The College on Problems of Drug Dependence 2018 Annual Meeting

1. **Barrows, A. J.** (2016). Personality characteristics associated with mmpi-2 l-scale elevations (poster presentation). 2016 Eastern Psychological Association Annual Meeting

Software Contributions

YabPlot A Python library for creating beautiful, publication-quality 3D brain visualizations.

VitroCal A Python library for analyzing data collected from *in vitro* calcium images.

Computer Skills

Programming Languages: Python, R, LaTeX, Markdown
Frameworks: Kedro, Shiny, SLURM
Developer Tools: Visual Studio Code/Positron, Quarto, Claude Code
Version Control: Git, GitHub
Libraries: Nilearn, tidyverse, ggplot2, lcmm, Plotly, pandas, NumPy, Matplotlib, scikit-learn
Software: Microsoft Excel, REDCap (Project Design)