KYLE J. LAFOLLETTE

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# EDUCATION

## Case Western Reserve University, Department of Psychological Sciences, Cleveland, OH (2020-present)

Ph.D., Psychology (Expected 2025)

*Dissertation Title:* Investigations of Affective Dynamics Using Equation Detection Algorithms

*Dissertation Committee:* Heath A. Demaree (advisor), Brooke N. Macnamara, Amit Goldenberg

## University of Michigan, College of Literature, Science and The Arts, Ann Arbor, MI (2014-2017)

B.S., Cognitive Science (Decision Sciences Track) & Biopsychology (2017)

# RESEARCH INTERESTS

 Affective Decision-making | Attitudes, Beliefs, & Preferences | Anxiety, Stress, & Uncertainty | Big Data Analytics | Decision Diffusion | Dynamical Systems | Emotion Inference | Equation Discovery Algorithms | Machine Learning

## MANUSCRIPTS IN PRESS AND UNDER REVIEW

**LaFollette, K. J.**, Rubez, D., Demaree, H. A., & Goldenberg, A. (Accepted in Principle). What mechanisms predict implicit bias using the Implicit Association Test? *Nature Human Behavior*.

Goldenberg, A.†, **LaFollette, K.** **J.**†, Huang, Z., Weisz, E., & Cikara, M. (In Press) The proportion of Black faces in the crowd increases the probability that crowd would be evaluated as emotional. *Scientific Reports*.

**LaFollette, K.** **J.**, Yuval, J., Schurr, R., Melnikoff, D., & Goldenberg, A. (Under Review). Identifying learning models from human behavior using bottom-up equation discovery.

**LaFollette, K. J.**, \*Fan, J., \*Puccio, A., & Demaree, H. A.(Under Review). Democratizing diffusion decision models: A comprehensive tutorial on developing, validating, and fitting diffusion decision models in Python with FlexDDM.

Barnett, M. K., **LaFollette, K. J.**, & Macnamara, B. N. (Under Review). Recalculating avoidance: Math anxiety predicts avoidance of effortful problem solving.

† *Indicates shared co-first authorship*

\* *Indicates supervised student*

## MANUSCRIPTS IN PREPARATION

**LaFollette, K. J.**, Frank, D. J., Burgoyne, A. P., & Macnamara, B. N. (In Preparation). Stress, uncertainty, and expertise: Evaluating the impact of stress reactivity on skill acquisition in variable environments.

\*Vázquez, J. I.,Rubez, D., & **LaFollette, K. J**. (In Preparation). Navigating food apartheid: How food security and racial context shape implicit attributions of the present and potential for change.

**LaFollette, K. J.**, Demaree, H. A., & Goldenberg, A. (In Preparation). A bottom-up equation discovery approach in momentary emotion analysis.

Rubez, D., **LaFollette, K. J.**, Day, C., & Short, E. J. (In Preparation). Testing the family stress model using computational approaches.

\* *Indicates supervised student*

## PEER REVIEWED CONFERENCE PROCEEDINGS

**LaFollette, K. J.**, \*Fan, J., \*Puccio, A., & Demaree, H. A. (2024). FlexDDM: A flexible decision-diffusion Python package for the behavioral sciences. In L. K. Samuelson, S. Frank, M. Toneva, A. Mackey, & E. Hazeltine (Eds.), *Proceedings of the Annual Meeting of the Cognitive Science Society,* 46.

Barnett, M. K., **LaFollette, K. J.**, & Macanamara, B. N. (2024). Distraction in math anxious individuals during math effort-based problem solving. In L. K. Samuelson, S. Frank, M. Toneva, A. Mackey, & E. Hazeltine (Eds.), *Proceedings of the Annual Meeting of the Cognitive Science Society,* 46.

**LaFollette, K. J.,** &Demaree, H. A. (2022). Comparing the effects of stress on directed and random exploration. In *Proceedings of the 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making*.

**LaFollette, K. J.**, Kotynski, A. E., Merner, A. R., Lim, R., Jiang, H., & Demaree, H. A. (2021). Exposure to discrete emotions influence processes of evidence accumulation in reinforcement-learning. In T. Fitch, C., Lamm, H. Leder, & K. Teßmar-Raible (Eds.), *Proceedings of the Annual Meeting of the Cognitive Science Society*, 43, 486-492.

## INVITED TALKS & SEMINARS

**LaFollette, K. J.** (2024, February). *Adaptive minds, adaptive systems: A complex systems approach to human reinforcement-learning and emotion dynamics* [Invited seminar]. Cognition, Brain, and Behavior Seminar, Department of Psychology, Harvard University.

**LaFollette, K. J.,** Yuval, J., Melnikoff, D., Schurr, R., & Goldenberg, A. (2023, February). *Using equation detection algorithms for model development in reinforcement-learning* [Invited talk]. Computational Cognitive Neuroscience Lab, Harvard University.

**LaFollette, K. J.** (2022, June). *Workshop on Stan and Bayesian Generative Models* [Invited talk]. Goldenberg & Jordan Lab, Harvard Business School.

**LaFollette, K. J.** (2021, October). *Exposure to discrete emotions influence processes of evidence accumulation in reinforcement-learning.* [Invited talk]. Goldenberg & Jordan Lab, Harvard Business School.

## CONFERENCE TALKS

**LaFollette, K. J.**, Frank, D. J., Burgoyne, A. P., & Macnamara, B. N. (2024, July). *Cognitive control promotes learning transfer across high stress, uncertain environments*. Talk to be presented at the 2024 International Society for Intelligence Research, Zurich, CH.

**LaFollette, K. J.**, Weisz, E., Cikara, M., Huang, Z., & Goldenberg, A. (2023, March). *Judgment of crowds as emotional increases with the proportion of Black faces*. Symposium presented at the 2023 Society for Affective Science Annual Meeting, Long Beach, CA.

**LaFollette, K. J.,** & Goldenberg, A. (2022, November). *Using equation detection algorithms for computational model selection in psychology*. Talk presented at the 52nd Annual Meeting of the Society for Computation in Psychology, Boston, MA.

**LaFollette, K. J.**, Weisz, E., Cikara, M., Huang, Z., & Goldenberg, A. (2022, May). *The ratio of Black faces in the crowd is positively associated with perception of emotion*. Talk presented at the 2022 Annual Convocation of the Association for Psychological Science, Chicago, IL.

**LaFollette, K. J.** (2022, April). *Latent risk behaviors predict model-based control*. Talk presented at the 94th Annual Conference of the Midwestern Psychological Association, Chicago, IL.

**LaFollette, K. J.**, Kotynski, A. E., Merner, A. R., Lim, R., Jiang, H., & Demaree, H. A. (2021, February). *Exposure to discrete emotions influence processes of evidence accumulation in reinforcement-learning*. Talk presented at the 42nd Annual Meeting of the Cognitive Science Society, Virtual.

**LaFollette, K. J.**, Satterfield, B. C., Esbit, S., Lazar, M. P., Grandner, M. A., & Killgore, W. D. S. (2019, June) *The effects of prior at-home sleep duration on reversal-learning during a “shoot/no-shoot” task.* Talk presented at the 33rd Annual SLEEP Meeting, San Antonio, TX.

**LaFollette, K. J.**, Cawley, A., & Mesa, V. (2015, April). *Inquiry-based learning in mathematics classrooms: Faculty concerns and solutions for student presentations.* Talk presented at the Annual MichMATYC Conference, Benton Harbor, MI.

## POSTER PRESENTATIONS

\*Fan, J., \*Puccio, A., Demaree, H. A., & **LaFollette, K. J.** (2024, April). *Validating new theoretical models of decision-making with FlexDDM*. Poster to be presented at the Spring 2024 Intersections Symposium and Poster Session at Case Western Reserve University, Cleveland, OH.

\*Vázquez, J. I., Rubez, D., & **LaFollette, K. J.** (2024, April). *Structural influences on temporal perceptions: Exploring attitudes toward the past, present, and future across diverse populations*. Poster to be presented at the Spring 2024 Intersections Symposium and Poster Session at Case Western Reserve University, Cleveland, OH.

\*Patel, R, **LaFollette, K. J.**, & Macnamara, B. N.(2024, April). *Understanding physiological response and reactivity to stressful environments*. Poster to be presented at the Spring 2024 Intersections Symposium and Poster Session at Case Western Reserve University, Cleveland, OH.

\*Fan, J., \*Puccio, A., Demaree, H. A., & **LaFollette, K. J.** (2023, December). *FlexDDM: A Customizable Diffusion Decision Model Python Package for Behavioral Sciences.* Poster presented at the Fall 2023 Intersections Symposium and Poster Session at Case Western Reserve University, Cleveland, OH.

Rubez, D., **LaFollette, K. J.**,& Short, E. J. (2023, November). *Socioeconomic Status and Inhibition in Preschool Children: A Diffusion Model Analysis*. Poster presented at the 64th Annual Meeting of the Psychonomic Society, San Francisco, CA.

Barnett, M. K., **LaFollette, K. J.**,& Macnamara, B. N. (2023, November). *Distraction and Avoidance Behaviors in Math Anxious Individuals During Testing*. Poster presented at the 64th Annual Meeting of the Psychonomic Society, San Francisco, CA.

\*Vázquez, J. I., Rubez, D., & **LaFollette, K. J.** (2023, November). *Attitudes toward the Past, Present, and Future: Examining Implicit Biases across Diverse Racial, Ethnic, and Socioeconomic Groups*. Poster presented at the 64th Annual Meeting of the Psychonomic Society, San Francisco, CA.

**LaFollette, K. J.**, Frank, D. J., Burgoyne, A. P., & Macnamara, B. N. (2023, November). *Individual differences in emotion-cognition traits govern the roles of stress and task characteristics on complex performance.* Poster presented at the 2023 Symposium for Individual Differences in Cognition, San Francisco, CA.

Barnett, M. K., **LaFollette, K. J.**, & Macnamara, B. N. (2023, November). *Avoidance behavior and distraction in math anxious individuals during math effort-based decision-making*. Poster presented at the 2023 Symposium for Individual Differences in Cognition, San Francisco, CA.

Rubez, D., & **LaFollette, K. J.** (2023, July). *Socioeconomic Status and Inhibition in Preschool Children: A Diffusion Model Analysis*. Poster presented at the 2023 Computational Psychiatry Conference, Dublin, Ireland.

Barrick, E. M., **LaFollette, K. J.**, Guerra, N., & Lincoln, SH. (2023, July). *Understanding Emotion Inference in Schizotypy: A Diffusion Modeling Approach*. Poster presented at the 2023 Computational Psychiatry Conference, Dublin, Ireland.

**LaFollette, K. J.**, & Rubez, D. (2023, May). *Dissociating effects of automatic from controlled processing on the evaluation of Implicit Association Tests*. Poster presented at the 2023 Annual Convocation of the Association for Psychological Science, Washington, D.C.

**LaFollette, K. J.**, & Demaree, H. A. (2022, November). *Solutions to the explore-exploit dilemma vary with perception of stress and intolerance of uncertainty.* Poster presented at the 63rd Annual Meeting of the Psychonomic Society, Boston, MA.

**LaFollette, K. J.,** &Demaree, H. A. (2022, July). *Comparing the effects of stress on directed and random exploration.* Poster presented at the5th Multidisciplinary Conference on Reinforcement Learning and Decision Making, Providence, RI.

**LaFollette, K. J.**, Kotynski, A. E., Frank, D. J., Merner, A. R., Jiang, H., Macnamara, B. N., Burns, K. J., & Demaree, H. A. (2021, November). *Toward a reinforcement learning decision diffusion model of choice behavior in the context of incidental discrete emotion*. Poster presented at the 62nd Annual Meeting of the Psychonomic Society, Virtual.

Satterfield, B. C., Anlap, I., Esbit, S., **LaFollette, K. J.**, Lazar, M. P., & Killgore, W. D. S. (2021, August). *Corticotropin-releasing hormone receptor 1 gene polymorphism modulates cognitive flexibility following acute stress and sleep deprivation*. Poster presented at the 2021 Military Health System Research Symposium, Virtual.

**LaFollette, K. J.**, Satterfield, B. C., Lazar, M. P., Esbit, S., Anlap, I., & Killgore, W. D. S. (2020, November). *Chunking of sequence memories during high-stress sleep deprivation.* Poster presented at the 61st Annual Meeting of the Psychonomic Society, Virtual.

**LaFollette, K. J.**, Satterfield, B. C., Lazar, M. P., Esbit, S., Anlap, I., & Killgore, W. D. S. (2020, August). *Emotion regulation during sleep deprivation and repeated physiological stress: Implications for motor skill learning and production.* Poster presented at the 34th Annual SLEEP Meeting, Virtual.

**LaFollette, K. J.,** Satterfield, B. C., Lazar, M. P., & Killgore, W. D. S. (2019, October). *Disentangling the effects of subjective task load and performance on neuroendocrine stress response.* Poster presented at the 49th Annual Society for Neuroscience Meeting, Chicago, IL.

Strong, M., Esbit, S., **LaFollette, K. J.**, Dailey, N. S., & Killgore, W. D. S. (2019, August). *Big five personality traits and how they relate to self-perceived invincibility.* Poster presented at the 2019 Military Health System Research Symposium, Kissimmee, FL.

**LaFollette, K. J.**, Satterfield, B. C., Esbit, S., Lazar, M. P., & Killgore, W. D. S. (2019, August). *Inadequate sleep quality and duration predicts disinhibited shooting on a “shoot/no shoot” task.* Poster presented at the 2019 Military Health System Research Symposium, Kissimmee, FL.

**LaFollette, K. J.**, Satterfield, B. C., Esbit, S., Lazar, M. P., & Killgore, W. D. S. (2019, August). *Self-perceived invincibility is associated with greater cognitive flexibility.* Poster presented at the 2019 Military Health System Research Symposium, Kissimmee, FL.

**LaFollette, K. J.**, Satterfield, B. C., Esbit, S., Lazar, M. P., Grandner, M. A., & Killgore, W. D .S. (2019, June) *Negative mood and poor sleep are associated with altered moral reasoning under stress.* Poster presented at the 33rd Annual SLEEP Meeting, San Antonio, TX.

Burns, A., Ozcan, M., Shepard, K. C., **LaFollette, K. J.**, Alkozei, A., Grandner, M. A., & Killgore, W. D. S. (2019, June) *The association between PTSD severity and insomnia is mediated by nightmares.* Poster presented at the 33rd Annual SLEEP Meeting, San Antonio, TX.

**LaFollette, K. J.**, Satterfield, B. C., Lazar, M. P., & Killgore, W. D. S. (2019, February) *Stay negative?: Positive affect is associated with increased psychosocial stress reactivity.* Poster presented at the International Neuropsychological Society 47th Annual Meeting, New York, NY.

**LaFollette, K. J.**, Satterfield, B. C., Lazar, M. P., & Killgore, W. D. S. (2019, February) *Predicting psychosocial stress reactivity from ability and trait-based emotional intelligence.* Poster presented at the International Neuropsychological Society 47th Annual Meeting, New York, NY.

Satterfield, B. C., **LaFollette, K. J.**, Lazar, M. P., & Killgore, W. D. S. (2019, February) *Prolonged psychosocial stress impairs cognitive flexibility.* Poster presented at the International Neuropsychological Society 47th Annual Meeting, New York, NY.

Esbit, S., Satterfield, B. C., **LaFollette, K. J.**, Botello, R., Alkozei, A., & Killgore, W. D. S. (2019, February) *High self-perceived adroitness: An altered perception of reality during sleep deprivation.* Poster presented at the International Neuropsychological Society 47th Annual Meeting, New York, NY.

**LaFollette, K. J.**, Satterfield, B. C., Lazar, M. P., & Killgore, W. D. S. (2018, November) *Attenuated model-based decision making is predictive of increased psychosocial stress reactivity.* Poster presented at the Society for Judgment and Decision Making 39th Annual Meeting, New Orleans, LA.

**LaFollette, K. J.**, Ibrahim, A., & Shah, P. (2016, April*). The anxious math student: An exploration of the motivational predictors of math anxiety.* Poster presented at the 8th Annual California Cognitive Science Conference, University of California, Berkeley, CA.

**LaFollette, K. J.**, Cawley, A., & Mesa, V. (2015, April). *Inquiry-based learning in mathematics classrooms: Finding solutions to common concerns.* Poster presented at the Annual UROP Spring Research Symposium, University of Michigan, Ann Arbor, MI.

\* *Indicates supervised student*

## EDITORIALS & PUBLIC COMMENTARIES

**LaFollette, K. J.** (2023). Tips to navigating the demands of graduate school: A scientific approach to well-being. *Observer: Student Notebook*. https://www.psychologicalscience.org/observer/student-notebook-demands-graduate-school

# AWARDS & HONORS

2024 Joseph F. Fagan, III Award for Research Excellence ($200)

2022 Graduate Council of Arts and Sciences Graduate Student Scholarship and Creative Endeavors Grant ($1000)

2022 Psychonomic Society Graduate Student Conference Award ($1,000)

2022 The Multi-disciplinary Conference on Reinforcement Learning and Decision-Making Student Travel Award ($300)

# RESEARCH & TRAINING COURSES

## Summer 2023 Harvard Business School

 Computational Organization Science Summer School

## Summer 2021 Neuromatch Academy

 Computational Neuroscience Summer School

## Summer 2019 University of Washington

##  Mathematics of Machine Learning Summer School

# TEACHING

## Fall 2023 Quantitative Methods in Psychology | Case Western Reserve University

 Instructor of Record

## Fall 2022 Computational Psychology & Neuroeconomics | Case Western Reserve University

 Instructor of Record

## Fall 2021 Quantitative Methods in Psychology | Case Western Reserve University

 Teaching Assistant

 Guest Lecturer: Distributional Families; Transformations

## PROFESSIONAL MEMBERSHIPS

## 2020-present Association for Psychological Science | Student Member

## 2020-present Psychonomic Society | Student Member

## 2020-present Cognitive Science Society | Student Member

## 2020-present Society for the Improvement of Psychological Science | Member

## 2019-present Society for Neuroscience | Student Member

## 2018-present Society for Judgment and Decision-Making | Member

## SKILLS

**Programming |** Python, Matlab, Javascript, R, Stan, LaTeX, bash shell scripting, VBA, Slurm and LSF cluster computing, cron, HTML, PHP, CSS

**Software |** FSL, FreeSurfer, PsychoPy, E-Prime, SPSS, RStudio, REDCap, Qualtrics, Adobe Experience Manager

**Physiological Measures** | Electrocardiography, magnetic resonance imaging, magnetic resonance spectroscopy, heart rate variability, electrodermal activity, salivary cortisol testing

**Analytical Methods |** Frequentist and Bayesian hypothesis testing, linear and nonlinear modeling, multivariate analysis, visualization, machine learning, hierarchical Bayesian modeling, Markov chain Monte Carlo