

CURRICULUM VITA

Nathaniel Haines
(Last Revised April 2021)

Professional Address

The Ohio State University
Department of Psychology
Lifespan Adjustment Project
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EDUCATIONAL HISTORY

Doctor of Philosophy, Psychology, 2016-current
Anticipated completion by Summer 2021
The Ohio State University, Columbus, OH
(APA accredited program)
Mentors: Theodore Beauchaine, PhD & Brandon Turner, PhD.

Master of Arts, Psychology, 2016-2017
The Ohio State University, Columbus, OH
(APA accredited program)
Mentors: Woo-Young Ahn, PhD & Theodore Beauchaine, PhD.

Bachelor of Arts, Psychology, 2011-2015
The Ohio State University, Columbus, OH

RESEARCH POSITIONS AND EMPLOYMENT

- 2018-current *Graduate Student Researcher-Model-Based Cognitive Neuroscience Lab,*
The Ohio State University, Columbus, OH
Director: Brandon Turner, Ph.D.
- 2017-current *Graduate Student Researcher-Lifespan Adjustment Project,*
The Ohio State University, Columbus, OH
Director: Theodore Beauchaine, Ph.D.
- 2016-2017 *Graduate Student Researcher-Computational Clinical Science Lab,*
The Ohio State University, Columbus, OH
Director: Woo-Young Ahn, Ph.D.
- 2015-2016 *Research Lab Manager-Computational Clinical Science Lab,*
The Ohio State University, Columbus, OH

Director: Woo-Young Ahn, Ph.D.

2015-2015 *Mental Health Technician*-Dublin Springs Inpatient Care Facility,
Dublin, OH

2014-2015 *Research Lab Manager*-Quantitative Psychology,
The Ohio State University, Columbus, OH
Director: Trisha Van-Zandt, Ph.D.

2013-2014 *Research Assistant*-Mood and Personality Studies,
The Ohio State University, Columbus, OH
Director: Jennifer Cheavens, Ph.D.

AWARDS AND ACADEMIC HONORS

2020 *The Society for the Improvement of Psychological Science –
Commendation*

2020-2021 *Presidential Fellowship – The Ohio State University*

2020 *Summer Research Excellence Award – The Ohio State University*

2019 *1st-place Psychology Department Fall Graduate Student Research
Forum*

2017 *Student Travel Award – The 50th Annual Meeting of the Society for
Mathematical Psychology*

2016 *Distinguished University Fellowship – The Ohio State University*

SCHOLARLY PUBLICATIONS

(Listed in reverse chronological order)

Published

2020

11. Ahn, W.-Y., Gu, H., Shen, Y., **Haines, N.**, Hahn, H. A., Teater, J. E., Pitt, M. A., Myung, J. I. (2020). Rapid, precise, and reliable measurement of delay discounting using a Bayesian learning algorithm. *Scientific Reports*, *10*, 12091. doi:10.1038/s41598-020-68587-x
10. **Haines, N.**, Beauchaine, T. P. (2020). Moving beyond ordinary factor analysis in studies of personality and personality disorder: A computational modeling perspective. *Psychopathology*. doi:10.1159/000508539
9. **Haines, N.**, Beauchaine, T. P., Galdo, M., Rogers, A. H., Hahn, H., Pitt, M. A., Myung, J. I., Turner, B. M., Ahn, W.-Y. (2020). Anxiety modulates preference for immediate rewards in trait-impulsive individuals: A hierarchical Bayesian analysis. *Clinical Psychological Science*, *8*, 1017-1036. doi:10.1177/2167702620929636
8. Romeu-Kelly*, **Haines, N.***, R.J., Busemeyer, J.R., Ahn, W.-Y., Vassileva, J. (2020). Computational modeling of decision making performance on the Cambridge gambling task with

applications to samples of drug users. *Drug and Alcohol Dependence*, 206, 107711. doi:10.1016/j.drugalcdep.2019.107711. *equal contribution

2019

7. Hahn, H., Kalnitsky, S., **Haines, N.**, Thamotharan, S., Beauchaine, T.P., & Ahn, W.-Y. (2019). Delay discounting of protected sex: Relationship type and sexual orientation influence sexual risk behavior. *Archives of Sexual Behavior*, 48, 2089-2102. doi:10.1007/s10508-019-1450-5
6. **Haines, N.**, Bell, Z., Crowell, S. E., Hahn, H., Kamara, D., McDonough-Caplan, H., Shader, T., & Beauchaine, T. P. (2019). Using automated computer vision and machine learning to code facial expressions of affective valence and arousal: Implications for emotion dysregulation research. *Development and Psychopathology*, 31, 871-886. doi:10.1017/S0954579419000312
5. Beauchaine, T. P., & **Haines, N.** (2019). Functionalist and constructionist perspectives on emotion dysregulation. In T. P. Beauchaine & S. E. Crowell (Eds.), *The Oxford handbook of emotion dysregulation*. New York, NY: Oxford University Press. epublished ahead of print. ISBN:9780190689285
4. **Haines, N.**, Southward, M. W., Cheavens, J. S., Beauchaine, T., & Ahn, W.-Y. (2019). Using computer-vision and machine learning to automate facial coding of positive and negative affect intensity. *PLoS ONE*, 14, e0211735. doi:10.1371/journal.pone.0211735

2018

3. **Haines, N.**, Vassileva, J., & Ahn, W.-Y. (2018). The Outcome-Representation Learning model: A novel reinforcement learning model of the Iowa Gambling Task. *Cognitive Science*, 47, 1-28. doi:10.1111/cogs.12688

2017

2. Rogers, A.H., Seager, I., **Haines, N.**, Hahn, H., Aldao, A., Ahn, W.Y. (2017). The indirect effect of emotion regulation on minority stress and problematic substance use in lesbian, gay, and bisexual individuals. *Frontiers in Psychology*, 8, 1881. doi:10.3389/fpsyg.2017.01881
1. Ahn, W.-Y., **Haines, N.**, & Zhang, L. (2017). Revealing neuro-computational mechanisms of reinforcement learning and decision-making with the hBayesDM package. *Computational Psychiatry*, 1, 24-57. doi:10.1162/CPSY_a_00002

Under Review/Under Revision

4. **Haines, N.**, Kvam, P. D., Irving, L. H., Smith, C., Beauchaine, T. P., Pitt, M. A., ... Turner, B. (under review). Learning from the reliability paradox: How theoretically informed generative models can advance the social, behavioral, and brain sciences. [PsyArXiv Preprint](#). doi:10.31234/osf.io/xr7y3
3. **Haines, N.**, Kvam, P., Turner, B. M. (under review). Explaining the description-experience gap in risky decision-making: Asymmetric learning of positive and negative prediction errors as a causal mechanism.

2. Ahn, W.-Y., Hendricks, P., & **Haines, N.** (under revision). Easyml: Easily build and evaluate machine learning models. [bioRxiv Preprint](#). doi:10.1101/137240
1. **Haines, N.**, Rass, O., Shin, Y. W., Brown, J. W., & Ahn, W. Y. (under review). Negative affect induces rapid learning of counterfactual representations: A model-based facial expression analysis approach. [bioRxiv Preprint](#). doi:10.1101/560011

INVITED TALKS/WORKSHOPS/SYMPOSIA

(Listed in reverse chronological order)

8. **Haines, N.** (2021, April). Using Generative Modeling to Understand the Development of Impulsive Behavior Across the Lifespan. *Talk presented virtually at the CogSci Grad Talks, Rutgers, New Brunswick.*
7. **Haines, N.** (2021, April). An Introduction to Bayesian data analysis. *Talk presented virtually at The Ohio State University Cognitive Proseminar.* ([Link Available](#))
6. **Haines, N.** (2021, January). An unexamined model is not worth fitting; Or, how generative models can advance theory development. *Talk presented at the Social/Personality Brownbag at University of Oregon.*
5. **Haines, N.**, Kvam, P. D., Irving, L. H., Smith, C., Beauchaine, T. P., Pitt, M. A., ... Turner, B. (2020, October). Learning from the reliability paradox: How theoretically informed generative models can advance the social, behavioral, and brain sciences. *Talk presented to the Neuroscience and Mental Health Group at the Institute of Cognitive Neuroscience, University College London.* ([Link Available](#))
4. **Haines, N.***, King, K. M., Yang, J., Molloy, M. F. (2020, May). Unrelated or unreliable? Sources of—and solutions to—the mismeasurement pervasive across psychological science. *Symposium accepted for the 32nd Annual Convention for the Association for Psychological Science.* Conference cancelled due to COVID-19 pandemic. *Symposium Chair.
3. **Haines, N.**, & Londeree, A. (2019, January). Data processing in R. *Tutorial created for The Ohio State University's Social Psychology Workshop Series.* ([Link Available](#))
2. Ahn, W.-Y., **Haines, N.** (2017, May). Computational modeling of decision-making tasks with a single line of coding: Modeling can be as easy as doing a t-test. *Workshop at the 29th Annual Convention for the Association for Psychological Science.* ([Link Available](#))
1. **Haines, N.**, Ahn, W.-Y. (2016, November). A new reinforcement learning model of the Iowa Gambling Task. *Talk presented at The Ohio State University Cognitive Proseminar.* ([Link Available](#))

CONFERENCE PRESENTATIONS AND POSTERS

(Listed in reverse chronological order)

21. Sullivan-Toole, H., **Haines, N.**, & Olino, T.M. (2021, May). Iowa Gambling Task: The ORL computational model and hierarchical Bayesian analysis improve re-test reliability. *Poster to be presented virtually at the 33rd Annual Convention for the Association for Psychological Science.*

20. **Haines, N.**, Kvam, P., Smith, C., Irving, L. (2021, February). Computational modeling improves the reliability and validity of behavioral measures of individual differences. *Poster presented by Peter Kvam virtually at the Annual Meeting of the Society for Personality and Social Psychology*. Virtual.
19. **Haines, N.**, Kvam, P., Turner, B. M. (2020, November). Computational models enhance test-retest reliability of behavioral measures of individual differences. *Talk presented by Peter Kvam virtually at the 61st Annual Meeting of the Psychonomic Society*. Virtual.
18. **Haines, N.**, Beauchaine, T. P., Matthew, G., Rogers, A. H., Hahn, H., Pitt, M. A., Myung, J. I., Turner, B. M., Ahn, W.-Y. (2020, July). Anxiety modulates preference for immediate rewards in trait-impulsive individuals: A decision theory and hierarchical Bayesian analysis. *Talk presented virtually at the 53rd Annual Meeting of the Society for Mathematical Psychology*. Virtual.
17. **Haines, N.**, Kvam, P., Irving, L., Smith, C., Pitt, M. A., Ahn, W.-Y., Beauchaine, T. P., Turner, B. M. (2020, May). Revisiting the Reliability Paradox: Generative models infer high test-retest reliability across a broad range of otherwise “unreliable” behavioral tasks. *Talk accepted for the 32nd Annual Convention for the Association for Psychological Science*. Conference cancelled due to the COVID-19 pandemic.
16. **Haines, N.**, Beauchaine, T. P., Matthew, G., Rogers, A. H., Hahn, H., Pitt, M. A., Myung, J. I., Turner, B. M., Ahn, W.-Y. (2019, September). Anxiety modulates preference for immediate rewards in trait-impulsive individuals: A hierarchical Bayesian analysis. *Talk presented at the Ohio State University Fall Graduate Research Forum, Columbus, OH, USA*.
15. **Haines, N.**, Kvam, P., Turner, B. M. (2019, August). Explaining the description-experience gap in risky decision-making: Asymmetric learning of positive and negative prediction errors as a causal mechanism. *Talk presented at the 52nd Annual Meeting of the Society for Mathematical Psychology, Montreal, Canada*.
14. **Haines, N.**, Bell, Z., Crowell, S. E., Hahn, H., Kamara, D., McDonough-Caplan, H., Shader, T., & Beauchaine, T. P. (2019, May). Using automated computer vision and machine learning to code facial expressions of affective valence and arousal: Implications for emotion dysregulation research. *Talk presented at the 31st Annual Meeting of the Association for Psychological Science, Washington D.C., USA*
13. **Haines, N.**, Turner, B. (2018, August). Bridging the description-experience gap in risky decision making: A simulation study. *Poster presented at the CCBS Fall Retreat, Mt Sterling, OH*.
12. **Haines, N.**, Shen, Y., Butka, Z., Lim, S.-L., Beauchaine, T., Ahn, W.-Y. (2018, July). The effect of stress on decision-making processes among nicotine smokers: A computational modeling approach. *Talk presented at the 51st Annual Meeting of the Society for Mathematical Psychology, Madison, WI*.
11. Ahn, W.-Y., Gu, H., Shen, Y., **Haines, N.**, Pitt, M., Myung, J. (2017, August). Pushing the limits of Precision Medicine: Use of Bayesian adaptive design optimization leads to highly rapid, precise, and reliable estimates of delay discounting rates. *Talk presented at the 50th Annual Meeting of the Society for Mathematical Psychology, London, UK*.

10. **Haines, N.**, Shen, Y., Ahn, W.-Y. (2017, August). Linking emotion to decision making through model-based facial expression analysis. *Talk presented at the 50th Annual Meeting of the Society for Mathematical Psychology*, London, UK.
9. Hahn, H., Seager, I., **Haines, N.**, Ahn, W.-Y. (2017, April). Assessing minority stress and peer influence effects on risky decision-making of sexual minority adults and heterosexual controls. *Poster presented at the 5th Annual National LGBTQ Health Conference*, Chicago, IL.
8. **Haines, N.**, Southward, M., Hendricks, P., Cohn, J., Cheavens, J., Ahn, W.-Y. (2017, March). Reading positive and negative emotion intensities from facial expressions using machine learning. *Poster presented at the 10th Annual Meeting of the Social and Affective Neuroscience Society*, Los Angeles, CA.
7. **Haines, N.**, Southward, M., Cheavens, J., & Ahn, W.-Y. (2016, November). Can affective computing technologies benefit psychology research? A study on the validity and application of automatic emotion-decoding tools. *Poster presented at the 50th Annual Convention for the Association for Behavioral and Cognitive Therapies*, New York, NY.
6. Ahn, W.-Y., **Haines, N.**, & Zhang, L. (2016, September). Revealing neuro-computational mechanisms of reinforcement learning and decision-making with the hBayesDM package. *Poster presented at the 30th Annual Meeting of the Society for Research in Psychopathology*, Baltimore, MD.
5. **Haines, N.**, Southward, M., Cheavens, J., & Ahn, W.-Y. (2016, September). Testing the validity of automatic emotion-decoding tools: Comparisons of emotion ratings between computer algorithms and human coders. *Poster presented at the 30th Annual Meeting of the Society for Research in Psychopathology*, Baltimore, MD.
4. **Haines, N.**, & Ahn, W.-Y. (2016, August). Testing reinforcement learning models for the Iowa Gambling Task. *Poster presented at the CCBS Fall Retreat*, Mt Sterling, OH.
3. **Haines, N.**, & Ahn, W.-Y. (2016, August). Testing reinforcement learning models for the Iowa Gambling Task. *Poster presented at the 49th Annual Meeting of the Society for Mathematical Psychology*, New Brunswick, NJ.
2. **Haines, N.**, & Zhang, L, Ahn, W.-Y. (2016, April). Revealing computational mechanisms of decision-making with a single line of coding. *Poster presented at: Reprogramming the Brain to Health: Computational Psychiatry and Neurology*, Dallas, TX.
1. **Haines, N.**, & Zhang, L, Ahn, W.-Y. (2016, March). Simple Yet Powerful: Hierarchical Modeling of Decision-Making Tasks with hBayesDM. *Poster presented at the 3rd Annual Decision Sciences Research Forum*, Columbus, OH.

SPECIALIZED TRAININGS AND WORKSHOPS

(Listed in chronological order)

- Meta-analysis workshop (2016, May). Speaker: Adam Hafdahl.
- Bayesian Estimation of Evidence Accumulation Architectures in Neuroscience and Cognition (2016, November). Organizer: Andrew Heathcote.
- Methods in Neuroscience at Dartmouth summer school on multiscale network dynamics (2017, August). Advisory board: James Haxby, Todd Heatherton, Dan Rockmore, and Thalia Wheatley.

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

- Proficient in R, Python, and Stan
- Exposure to SPSS, SAS, and C++

EXPERIMENTAL DESIGN SOFTWARE

- OpenSesame
- PyGame

CODE MANAGEMENT

- GitHub (<https://github.com/Nathaniel-Haines>)

SOFTWARE DEVELOPMENT

- **hBayesDM**: developer (<https://github.com/CCS-Lab/hBayesDM>)
- **easym1**: co-developer (<https://github.com/CCS-Lab/easym1>)

CLINICAL TRAINING

PRACTICUM SITES

- 2020-2021 *Psychological Service Center,*
Novel Training: Advanced training in Cognitive Behavioral Therapy for Depression and Anxiety Disorders, in addition to peer supervision opportunities with 2nd year psychology trainees.
Location: The Ohio State University, Columbus, OH
Supervisor: Anne Wilson, Ph.D.
- 2019-2020 *OSUMC Psychiatry: Anxiety, Stress, and OCD,*
Novel Training: Advanced training in Acceptance and Commitment Therapy, brief exposure therapy for panic disorder, exposure and response prevention for obsessive compulsive disorder
Location: OSU Wexner Medical Center, Upper Arlington, OH
Supervisor: Lawrence Needleman, Ph.D.
- 2018-2019 *Addiction Recovery Clinic,*
Novel Training: Motivational Interviewing, Mindfulness Based Relapse Prevention, Acceptance and Commitment Therapy
Location: The Ohio State University, Columbus, OH
Supervisor: Michael Vilensky, Ph.D.
- 2017-2018 *Psychological Service Center*
Novel Training: Cognitive Behavioral Therapy for Depression and Anxiety Disorders
Location: The Ohio State University, Columbus, OH
Supervisor: Michael Vilensky, Ph.D.

WORKSHOPS

- 2018 *Workshop for Acceptance and Commitment Therapy*

Location: The Ohio State University, Columbus, OH
Instructor: Steven Hayes, Ph.D.

PSYCHOLOGICAL ASSESSMENT

- SCID-5-RV
- WAIS-IV
- MMPI-2
- MMPI-2-RF