

Jason S. Tsukahara, Ph.D.

Assistant Professor

University of North Carolina Wilmington, Department of Psychology

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Employment

Assistant Professor

University of North Carolina Wilmington • Department of Psychology

2026 - Present

Wilmington, NC, USA

Post-Doctoral Researcher, Jha Lab

University of Miami • Principal Investigator: Amishi Jha, Ph.D.

2024 - 2026

Coral Gables, FL, USA

Post-Doctoral Researcher, Attention & Working Memory Lab

Georgia Institute of Technology • Principal Investigator: Randall Engle, Ph.D.

2023 - 2024

Atlanta, GA, USA

Education

Doctor of Philosophy, Cognition and Brain Science

Georgia Institute of Technology • Advisor: Randall Engle, Ph.D. • Minor in Quantitative Psychology

2014-2022

Atlanta, GA, USA

Master of Arts, General Experimental Psychology

California State University San Bernardino • Advisor: Hideya Koshino, Ph.D.

2012-2014

San Bernardino, CA, USA

Bachelor of Art, Behavioral Neuroscience

Western Washington University

2006-2011

Bellingham, WA, USA

Submitted and Preprints

3. **Tsukahara J.S.**, Zanesco, A.P., Schwartzman, B., Denkova, E., Jha, A.P. (2026). Catching the drift: EEG microstate dynamics resemble time-on-task changes in sustained attention and mind wandering. *Submitted to Cognitive Neuroscience*.
2. Jha, A.P., Zanesco, A.P., Denkova, E., Schwartzman, B., **Tsukahara, J.S.**, Barry J., Alessio, C., Rogers, S.L. (2026). The effects of a short-form mindfulness training on the vigilance decrement. *In Preparation for Submission*.
1. **Tsukahara, J.S.**, Engle, R.W. (2025). Sustaining the focus of attention and how it relates to performance in complex cognitive tasks. *PsyArxiv*. <https://doi.org/10.31234/osf.io/wd5kz> <https://psyarxiv.com/wd5kz/>. [Cited 4 times]

Journal Articles

Citations: 1275 h-index: 13

19. Seeburger, D.T., **Tsukahara, J.S.**, Xu, N., Ahluwalia, V., Keilholz, S.D., Engle, R.W. (2026). Attention control ability is associated with frontoparietal control network interactions. *Proceedings for the National Academy of Sciences*, , 123(19), e2526828123. <https://doi.org/10.1073/pnas.2526828123>
18. Denkova, E., Tardibuono, T.K., **Tsukahara, J.S.**, Zanesco, A.P., Jha, A.P. (2025). Climate anxiety impairs sustained attention: Objective evidence of a cognitive cost. *Frontiers in Psychology*, , 16(1624782). <https://doi.org/10.3389/fpsyg.2025.1624782>. [Cited 1 times]
17. Schwartzman B., Zanesco A.P., Denkova E., **Tsukahara J.S.**, Jha, A.P. (2025). Examining the association between vigilance and mind wandering. *Frontiers in Cognition*, , 4 - 2025. <https://doi.org/10.3389/fcogn.2025.1577053>. [Cited 1 times]
16. **Tsukahara, J.S.**, Mashburn, C.A., Campbell, J., Engle, R.W. (2025). Faster, smarter, and more attentive: The control of attention is about more than just conflict resolution. *Journal of Experimental Psychology: General*,

, 154(8), 2318–2345. <https://doi.org/10.1037/xge0001758>. [Cited 2 times]

15. Burgoyne, A.P., Mashburn, C.A., **Tsukahara, J.S.**, Pak, R., Coyne, J.T., Foroughi, C., Sibley, C., Drollinger, S.M., Engle, R.W. (2025). Attention control measures improve the prediction of performance in Navy trainees. *International Journal of Selection and Assessment*, , 22(1), e12510.
14. Mashburn, C.A., Burgoyne, A.P., **Tsukahara, J.S.**, Pak, R., Coyne, J.T., Sibley, C., Foroughi, C., Engle, R.W. (2024). Knowledge, attention, and psychomotor ability: A latent variable approach to understanding individual differences in simulated work performance. *Intelligence*, , 104. <https://doi.org/10.1016/j.intell.2024.101835>. [Cited 5 times]
13. Draheim, C., **Tsukahara, J.S.**, Engle, R.W. (2023). Replication and extension of the toolbox approach to measuring attention control. *Behavior Research Methods*, , 56, 2135–2157. <https://doi.org/10.3758/s13428-023-021> [Cited 19 times]
12. Burgoyne, A.P., **Tsukahara, J.S.**, Mashburn, C.A., Pak, R., Engle, R.W. (2023). Nature and Measurement of Attention Control. *Journal of Experimental Psychology: General*, , 152(8), 2369–2402. <https://doi.org/10.1037/xge0001408>. [Cited 81 times]
11. Burgoyne, A.P., Mashburn, C.A., **Tsukahara, J.S.**, Engle, R.W. (2022). Attention control and process overlap theory: Searching for cognitive processes underpinning the positive manifold. *Intelligence*, , 91, 101629. <https://doi.org/10.1016/j.intell.2022.101629>. [Cited 33 times]
10. Burgoyne, A.P., Mashburn, C.A., **Tsukahara, J.S.**, Hambrick, D.Z., Engle, R.W. (2021). Understanding the relationship between rationality and intelligence: A latent-variable approach. *Thinking and Reasoning*, , 29(1), 1-42. <https://doi.org/10.1080/13546783.2021.2008003>. [Cited 19 times]
9. **Tsukahara, J.S.**, Engle, R.W. (2021). Fluid intelligence and the locus coeruleus-norepinephrine system. *Proceedings of the National Academy of Sciences*, , 118(46), e2110630118. <https://doi.org/10.1073/pnas.2110630118>. [Cited 45 times]
8. Martin, J.D., **Tsukahara, J.S.**, Draheim, C., Shipstead, Z., Mashburn, C., Vogel, E.K., Engle, R.W. (2021). The visual arrays task: Visual storage capacity or attention control?. *Journal of Experimental Psychology: General*, , 150(12), 2525–2551. <https://doi.org/10.1037/xge0001048>. [Cited 23 times]
7. **Tsukahara, J.S.**, Draheim, C., Engle, R.W. (2021). Baseline pupil size is related to fluid intelligence: A reply to Unsworth et al. (2021). *Cognition*, , 215, 104826. <https://doi.org/10.1016/j.cognition.2021.104826>. [Cited 4 times]
6. **Tsukahara, J.S.**, Engle, R.W. (2021). Is baseline pupil size related to cognitive ability? Yes (under proper lighting conditions). *Cognition*, , 211, 104643. <https://doi.org/10.1016/j.cognition.2021.104643>. [Cited 47 times]
5. Draheim, C., **Tsukahara, J.S.**, Martin, J.D., Engle, R.W. (2021). A toolbox approach to improving the measurement of attention control. *Journal of Experimental Psychology: General*, , 150(2), 242-275. <https://doi.org/10.1037/xge0000783>. [Cited 153 times]
4. Borges, U., Pfannenstiel, M., **Tsukahara, J.**, Laborde, S., Klatt, S., Raab, M. (2021). Transcutaneous vagus nerve stimulation via tragus or cymba conchae: Are its psychophysiological effects dependent on the stimulation area?. *International Journal of Psychophysiology*, , 161, 64-75. <https://doi.org/10.1016/j.ijpsycho.2021.01.003>. [Cited 57 times]
3. Burgoyne, A.P., **Tsukahara, J.S.**, Draheim, C., Engle, R.W. (2020). Differential and experimental approaches to studying intelligence in humans and non-human animals. *Learning and Motivation*, , 72, 101689. <https://doi.org/10.1016/j.lmot.2020.101689>. [Cited 13 times]
2. **Tsukahara, J.S.**, Harrison, T.L., Draheim, C., Martin, J., Engle, R.W. (2020). Attention control: The missing link between sensory discrimination and intelligence. *Attention, Perception, & Psychophysics*, , 82, 3445–3478. <https://doi.org/10.3758/s13414-020-02044-9>. [Cited 36 times]

1. **Tsukahara, J.S.**, Harrison, T.L., Engle, R.W. (2016). The relationship between baseline pupil size and intelligence. *Cognitive Psychology*, 91, 109-123. <https://doi.org/10.1016/j.cogpsych.2016.10.001>. [Cited 130 times]

Chapters

2. Burgoyne, A.P., Martin, J.D., Mashburn, C.A., **Tsukahara, J.S.**, Draheim, C., Engle, R.W. (2023). Measuring individual differences in working memory capacity and attention control and their contribution to language comprehension. In J. S. Schwieter & E. Z. S.Wen (Eds.), *The Cambridge handbook of working memory and language*. .
1. Mashburn, C.A., **Tsukahara, J.S.**, Engle, R.W. (2020). Individual differences in attention control: Implications for the relationship between working memory capacity and fluid intelligence. In R.H. Logie, V. Camos, & N. Cowan (Eds.), *Working memory: The state of the science*. Oxford University Press., . <https://doi.org/10.1093/oso/9780198842286.003.0007>. [Cited 14 times]

Professional Talks

6. **Tsukahara, J.S.**, Denkova, E., Rogers, S.L., Jha, A.P. (2025). Mitigating Vulnerability in Attentional Control through Mindfulness-Based Training in High-Stress Operational Contexts. [Conference Symposium Presentation]. In A.P. Burgoyne (Chair), Attention Control in the Wild [Symposium]. Sixty Sixth Annual Meeting of the Psychonomic Society, Denver, CO, USA.
5. **Tsukahara, J.S.**, Engle, R.W. (2023). Understanding the brain mechanisms of individual differences in attention control. [Grant Review Presentation]. Annual Program Review for the Office of Naval Research, Norfolk, Virginia, USA.
4. **Tsukahara, J.S.**, Engle, R.W. (2022). Individual differences in visual working memory capacity: Are we measuring what we think we are measuring?. [Conference Presentation]. One Hundred Thirteenth Annual meeting of the Southern Society for Philosophy and Psychology, Mobile, AL, USA.
3. **Tsukahara, J.S.**, Harrison T.L. & Engle, R.W. (2016). More than meets the eye: Converging evidence from pupillometry, locus coeruleus function, and resting-state functional connectivity. [Conference Presentation]. North Georgia Regional Memory Meeting, Atlanta, GA, USA.
2. **Tsukahara, J.S.** (2014). The effect of working memory capacity and working memory load on the Simon task. [Conference Presentation]. First Annual Learning Research Institute Conference, California State University, San Bernardino, CA.
1. **Tsukahara, J.S.** (2014). Perceptual load effect in the Simon task. [Conference Presentation]. Third Annual Student Research Symposium "Meeting of the Minds", California State University, San Bernardino, CA.

Conference Posters

22. **Tsukahara, J.S.**, Pillai, M, Mashburn, C.A., Engle, R.W. (2024). Pupil Dilations Reveal Distinct Processes of Maintenance and Disengagement in Relation to Cognitive Abilities. **Poster** presented by Jason S. Tsukahara at the 65th annual meeting of the Psychonomic Society, New York, NY, USA.
21. Vemuri, A., Tadanki, D, Madeleine, M., Kallis, E., Glover, S., Desai, K., Cole, K., Barrett, C., Seeburger, D., Tsukahara, J.S. (2023). Brain network synchronization of individuals with differential cognitive abilities. **Poster** presented by undergraduate students at the Annual Better Together Conference at Georgia Tech, Atlanta, GA, USA.
20. Panuganti, R., Gosrani, K., Tsukahara, J.S. (2023). The eyes reveal more than you think: The role of attention control in maintaining and disengaging from information in working memory. **Poster** presented by undergraduate students at the Annual Better Together Conference at Georgia Tech, Atlanta, GA, USA.
19. **Tsukahara, J.S.**, Mashburn, C.A., Engle, R.W. (2023). The role of attention control in inspection time tasks.

Poster presented by Jason S. Tsukahara at the 64th annual meeting of the Psychonomic Society, San Francisco, CA, USA.

18. Seeburger, D.T., **Tsukahara, J.S.**, Engle, R.W. (2023). Brain network synchronization of individuals with differential cognitive abilities. **Poster** presented by Jason S. Tsukahara at the 64th annual meeting of the Psychonomic Society, San Francisco, CA, USA.
17. Charbonneau, B., González-Espinar, F.J., Burgoyne, A.P., Tsukahara, J.S., Mashburn, C.A., Engle, R.W., Hutchison, K. (2023). Predicting Reading Comprehension with Novel Attentional Control Squared Tasks. **Poster** presented by Brooke Charbonneau at the 64th annual meeting of the Psychonomic Society, San Francisco, CA, USA.
16. Barrett, C., Gosrani, K., Miller, M., Panuganti, R., Sathya, S., Tadanki, D., Tayal, S., Vemuri, A., Seeburger, D., Tsukahara, J.S. (2023). More than meets the eye: Pupil size, cognitive ability, and functional connectivity. **Poster** presented by undergraduate students at the annual GT/GSU CABI Callosum conference, Atlanta, GA, USA.
15. **Tsukahara, J.S.**, Engle, R.W. (2022). A novel measure of individual differences in sustained attention and its relation to attention control. **Poster** presented by Jason S. Tsukahara at the 63rd annual meeting of the Psychonomic Society, Boston, MA, USA.
14. Burgoyne, A.P, Tsukahara, J.S., Mashburn, C.A., Engle, R.W. (2022). Three-Minute Tests of Attention Control: Reliable and Valid Predictors of Complex Task Performance. **Poster** presented by Alex P. Burgoyne at the 63rd annual meeting of the Psychonomic Society, Boston, MA, USA.
13. **Tsukahara, J.S.**, Engle, R.W. (2021). Inspection time, processing speed, and attention control. **Poster** presented by Jason S. Tsukahara at the 62nd Annual meeting of the Psychonomic Society, Virtual.
12. **Tsukahara, J.S.**, Engle, R.W. (2019). Individual differences in baseline pupil size: Why lighting conditions matter. **Poster** presented by Jason S. Tsukahara at the 60th Annual meeting of the Psychonomic Society, Montréal, Canada.
11. Draheim, C., Tsukahara, J. S., Martin, J. D., Mashburn, C. A., Engle, R. W. (2019). Attention control is a unitary concept when measured with accuracy-based tasks. **Poster** presented by Christopher Draheim at the 60th annual meeting of the Psychonomic Society, Montréal, Canada.
10. **Tsukahara, J.S.**, Engle, R.W. (2018). Pupil size as an indicator of arousal and task focus. **Poster** presented by Jason S. Tsukahara at the 59th Annual meeting of the Psychonomic Society, New Orleans, LA, USA.
9. **Tsukahara, J.S.**, Harrison, T. L., Hicks, K. L., Draheim, C., Martin, J. D., Engle, R. W. (2017). Measuring attention control: Can we do better?. **Poster** presented by Jason S. Tsukahara at the 58th annual meeting of the Psychonomic Society, Vancouver, Canada.
8. **Tsukahara, J.S.**, Engle, R.W. (2016). Mind wandering in low and high demanding tasks: Frequency vs. degree of disengagement. **Poster** presented by Jason S. Tsukahara at the 57th annual meeting of the Psychonomic Society, Boston, MA, USA.
7. **Tsukahara, J.S.**, Harrison, T.L., Engle, R.W. (2016). More than meets the eye: The relationship between pupil size and intelligence. **Poster** presented by Jason S. Tsukahara at the annual GT/GSU CABI Callosum conference, Atlanta, GA, USA.
6. **Tsukahara, J.S.**, Koshino, H. (2014). Does working memory capacity have the same effect on the Simon task as working memory load?. **Poster** presented by Jason S. Tsukahara at the 55th annual meeting of the Psychonomic Society, Long Beach, CA, USA.
5. Koshino, H., Veltri, G.A., **Tsukahara, J.S.**, Alderson, E. (2014). Effects of working memory and perceptual load on Simon interference. **Poster** presented by Jason S. Tsukahara at the 55th annual meeting of the Psychonomic Society, Long Beach, CA, USA.
4. **Tsukahara, J.S.**, Rivera, L., Koshino, H. (2014). The effects of perceptual load on a Simon task. **Poster** presented by Jason S. Tsukahara at the 94th annual Western Psychological Association convention, Portland,

OR, USA.

3. Koshino, H., **Tsukahara, J.S.**, Rivera, L. Veltri, G.A., Cross, T., Alderson (2014). Effects of perceptual load and working memory on a Simon task. **Poster** presented by Hideya Koshino at the 94th annual Western Psychological Association convention, Portland, OR, USA.
2. Koshino, H., **Tsukahara, J.S.** (2013). Relative effectiveness of attention capture between color singleton and working memory. **Poster** presented by Jason S. Tsukahara at the 54th annual meeting of the Psychonomic society, Toronto, Canada.
1. **Tsukahara, J.S.**, Banerjee, S., Koshino, H. (2013). Interaction between Simon and Flanker effects. **Poster** presented by Jason S. Tsukahara at the 93rd annual Western Psychological Association convention, Reno, NV, USA.

Popular Writing and Interviews

4. **Tsukahara, J.S.**, Burgoyne, A.P., Engle, R.W. (2021, June 2). Pupil Size Is a Marker of Intelligence, *Scientific American*. NA, NA. <https://www.scientificamerican.com/article/pupil-size-is-a-marker-of-intelligence/>
3. **Tsukahara, J.S.** (2021, June 10). Could the size of one's pupils be an indicator of cognitive ability? [Radio interview]. *KPCC AirTalk with Larry Mantle*, NA. <https://archive.kpcc.org/programs/airtalk/2021/06/10/66845/one-study-explores-relationship-between-pupil-size/>
2. **Tsukahara, J.S.** (2021, July 6). Pupil Size and Intelligence [Radio interview]. *BYU Radio Top of Mind with Julie Rose*, NA. <https://www.byuradio.org/7af0b5bc-9ac6-43ba-8ec7-ebd4cf3345c9?play=1>
1. **Tsukahara, J.S.** (2021, July 4). It's in your eyes: pupil size a marker of intelligence [Radio interview]. *Radio New Zealand Sunday Morning with Jim Mora*, NA. <https://www.rnz.co.nz/national/programmes/sunday/audio/2018802440/it-s-in-your-eyes-pupil-size-a-marker-of-intelligence>

Grants and Awards

Office of Naval Research Grant

2022-2024

A Latent Variable Investigation of Cognitive Ability, Locus Coeruleus, and Functional Connectivity of Brain Networks. Grant application written by Jason S. Tsukahara for the PhD preliminary examination, awarded to Randall W. Engle.

Larry S. O'Hara Fellowship

2022

This award is given to top graduate students in the College of Sciences at Georgia Tech.

Best Graduate Student Paper Award

2022

School of Psychology, Georgia Institute of Technology

Teaching Experience

UNDERGRADUATE COURSES

PSYC 2015: Research Methods

Georgia Institute of Technology

Taught research methods, statistics, R, JASP, and provided support and guidance on group research projects.

Fall 2023

PSYC 4031: Applied Experimental Psychology

Georgia Institute of Technology

Taught advanced research methods, statistics, R, JASP, and provided support and guidance on group research projects.

Spring 2022

Intro to Experimental Psychology Lab Section

California State University

Taught experimental design, manuscript writing in APA format, oversaw student experiments

Fall 2013 - Spring 2014

Supplemental Instructions to Psychological Statistics

California State University

Provided additional instruction in undergraduate level statistics

Winter 2013 - Spring 2013

GRADUATE COURSES

PSYC 6020: Graduate Level Statistics II Lab

Taught regression and general linear model in R and SPSS; Course design; weekly labs

Georgia Institute of Technology

Spring 2019

GUEST LECTURER

Guest Lecture: Cognitive Psychology

Lectured on my research on sensory discrimination and intelligence. Lecture recording available at:

<https://www.youtube.com/watch?v=fhU7NM90AYQ>

Lawrence University, Virtual

Spring 2022

Guest Lecture: Introduction to I/O Psychology

Lectured on an introduction to research on intelligence

Georgia Institute of Technology

Fall 2017

Introduction to Psychology

Teaching practicum; Guest Lecture: Research Methodology, Attention and Consciousness, Thinking and Intelligence

Georgia Institute of Technology

Fall 2016

Open-Source Software and Website Management

R PACKAGES

pupillometry

An R package to preprocess pupil data

<https://dr-jt.github.io/pupillometry>

semoutput

An R package to create nice looking output for CFA and SEM analysis using lavaan and semPlot

<https://dr-jt.github.io/semoutput>

englelab

An R package for processing complex-span and attention control tasks from the EngleLab

<https://englelab.github.io/englelab>

Technical Skills

RESEARCH METHODS

My primary experience is in design of research experiments using both individual differences and experimental approaches, as well as designing experiments to measure baseline and task-evoked changes in pupil size.

Individual differences

Functional magnetic resonance imaging (fMRI)

Experimental manipulation

Electroencephalography (EEG)

Pupillometry

STATISTICAL METHODS

General linear model (Regression, ANOVA)

Structural equation modelling

Factor analysis (Principal components, Exploratory factor analysis)

Multilevel modelling

PROGRAMMING

My primary programming experience is in creating experimental tasks, data management and processing, statistical analysis, and website design.

Experimental Tasks

E-Prime

Data Management and Analysis

R (see open-source software section)

PsychoPy

SPSS (statistical analysis tool)

Website and Graphic Design

HTML; CSS

Adobe Illustrator; Adobe Lightroom

Graduate Coursework

Cognitive Psychology

Statistical Analysis I (ANOVA)

Intelligence (*seminar*)
Neuroimaging (*seminar*)
Life-Span Developmental Psychology
Biopsychology
Transcranial Magnetic Stimulation (*seminar*)
Teaching Practicum
Learning and Motivation
Personal and Social Psychology

Statistical Analysis II (*regression*)
Multivariate Statistics
Psychometric Theory
Structural Equation Modeling
Item Response Theory
Psychological Testing
Research Methods

Professional Service

Editor:

Frontiers Research Topic Editor: The Intersection of Ascending Arousal System, Functional Brain Networks, and Human Cognition

Peer-reviewed for:

Current Psychology - Behavioral Research Methods - Journal of Experimental Psychology: Human Perception and Performance - Quarterly Journal of Experimental Psychology - Psychological Research - Applied Optics - International Journal of Psychophysiology - Gerontology - Psychological Science - Psychophysiology - Psychonomic Bulletin and Review - Journal of Experimental Psychology: Learning, Memory, and Cognition - Attention, Perception, and Psychophysics - Biological Psychology - Cognitive, Affective, and Behavioral Neuroscience - Cognition - Journal of Experimental Psychology: General - Current Directions in Psychological Science - Attention, Perception, and Psychophysics

Reviewed grants for:

GSU/GT Center for Advanced Brain Imaging