

Han Zhang

ASSISTANT RESEARCH SCIENTIST

University of Michigan Transportation Research Institute

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Research Interests

Attention; Cognitive Control; Distraction; Driver Behavior

Employment

Assistant Research Scientist

UNIVERSITY OF MICHIGAN TRANSPORTATION RESEARCH INSTITUTE

06/2025-present

Postdoctoral Research Fellow

DEPARTMENT OF PSYCHOLOGY, UNIVERSITY OF MICHIGAN

06/2020-06/2025

Education

Doctor of Philosophy, Education and Psychology

UNIVERSITY OF MICHIGAN

- Dissertation: Mind-wandering: What Can We Learn from Eye Movements?

09/2014-05/2020

Master of Science, Psychology

UNIVERSITY OF MICHIGAN

09/2014-04/2018

Bachelor of Science, Psychology

BEIJING NORMAL UNIVERSITY

09/2010-07/2014

Awards and Grants

Understanding Takeover Performance in Urgent Situations during Level-3 Driving

UMTRI & MCITY INTEGRATION FUND, UNIVERSITY OF MICHIGAN

- Role: PI

2025

\$99,971

AS POSTDOC

Probing Attentional Allocation with a Novel Forced-Response Method

STANDARD GRANT, NATIONAL SCIENCE FOUNDATION

- Role: Key Personnel (Postdoc)

2023

\$659,877

Investigating Interference-Control in ADHD Using a Novel Forced-Response Method

R21, NATIONAL INSTITUTE OF MENTAL HEALTH

- Role: Key Personnel (Postdoc)

2023

\$429,000

AS GRADUATE STUDENT

Stanley E. and Ruth B. Dimond Best Dissertation Award

SCHOOL OF EDUCATION, UNIVERSITY OF MICHIGAN

- Dissertation: Mind-wandering: What Can We Learn from Eye Movements?

2020

\$500

MPA Graduate Student Paper Award

MIDWESTERN PSYCHOLOGICAL ASSOCIATION ANNUAL MEETING

- Scan-paths of mind-wandering during real-world scene perception

2020

\$300

ProQuest Distinguished Dissertation Award (Nomination)

SCHOOL OF EDUCATION, UNIVERSITY OF MICHIGAN

2020

Rackham One-Term Dissertation Fellowship

RACKHAM GRADUATE SCHOOL, UNIVERSITY OF MICHIGAN

2019

\$17417

| | |
|---|------------------|
| Rackham Graduate Student Research Grant | 2019 |
| RACKHAM GRADUATE SCHOOL, UNIVERSITY OF MICHIGAN | \$3000 |
| Rackham Conference Travel Grant | 2019, 2018, 2017 |
| RACKHAM GRADUATE SCHOOL, UNIVERSITY OF MICHIGAN | \$1050 |
| Rackham Summer Training Award | 2018 |
| RACKHAM GRADUATE SCHOOL, UNIVERSITY OF MICHIGAN | \$3700 |
| Professor & Mrs. Cho-Yee To Travel Grant | 2017, 2015 |
| SCHOOL OF EDUCATION, UNIVERSITY OF MICHIGAN | \$500 |

AS UNDERGRADUATE STUDENT

| | |
|---|------------|
| China National Scholarship | 2014 |
| MINISTRY OF EDUCATION OF THE PEOPLE'S REPUBLIC OF CHINA | \$1500 |
| The First Rank Academic Scholarship | 2014, 2013 |
| FACULTY OF PSYCHOLOGY, BEIJING NORMAL UNIVERSITY | \$300 |
| Beijing Student Research and Entrepreneurial Action Plan | 2013 |
| BEIJING MUNICIPAL COMMISSION OF EDUCATION | \$1500 |
| Undergraduate Student Research Grant | 2012 |
| FACULTY OF PSYCHOLOGY, BEIJING NORMAL UNIVERSITY | \$280 |

Journal Articles

Underlined names indicate undergraduate research mentees.

1. **Zhang, H.**, & Jonides, J. (2025). PupEyes: An interactive python library for eye movement data processing. *Behavior Research Methods*. <https://doi.org/10.3758/s13428-025-02830-z>
2. **Zhang, H.**, Brar, E., York, A. K., & Jonides, J. (2025). Are abrupt onsets highly salient? *Journal of Experimental Psychology: Human Perception and Performance*, 51(7), 911–926. <https://doi.org/10.1037/xhp0001329>
3. **Zhang, H.**, Sellers, J., Lee, T. G., & Jonides, J. (2025). The temporal dynamics of visual attention. *Journal of Experimental Psychology: General*, 154(2), 435–456. <https://doi.org/10.1037/xge0001661>
4. **Zhang, H.**, York, A. K., & Jonides, J. (2025). Attentional capture by abrupt onsets: Foundations and emerging issues. *Journal of Experimental Psychology: Human Perception and Performance*, 51(3), 283–299. <https://doi.org/10.1037/xhp0001275>
5. Lee, T. G., Sellers, J., Jonides, J., & **Zhang, H.**, (2025). The forced-response method: A new chronometric approach to measure conflict processing. *Behavior Research Methods*, 57(1), 15. <https://doi.org/10.3758/s13428-024-02516-y>
6. Fansher, M., Lalwani, P., Adkins, T. J., **Zhang, H.**, Quirk, M., Carlson, M., Boduroglu, A., Lewis, R. L., Jonides, J., & Shah, P. (2025). A brief intervention to improve reasoning about accumulation. *Journal of Experimental Psychology: Applied*, 31(2), 99–125. <https://doi.org/10.1037/xap0000532>
7. **Zhang, H.**, Miller, K. F., & Jonides, J. (2024). How does mind-wandering affect distractor suppression? *Visual Cognition*, 32(9), 1027–1044. <https://doi.org/10.1080/13506285.2024.2347605>
8. Adkins, T. J., **Zhang, H.**, & Lee, T. G. (2024). People are more error-prone after committing an error. *Nature Communications*, 15(1), 1–11. <https://doi.org/10.1038/s41467-024-50547-y>
9. **Zhang, H.**, Abagis, T. R., Steeby, C. J., & Jonides, J. (2024). Lingering on distraction: Examining distractor rejection in adults with ADHD. *Visual Cognition*, 32(9), 910–924. <https://doi.org/10.1080/13506285.2024.2328379>
10. **Zhang, H.**, Miyake, A., Osborne, J., Shah, P., & Jonides, J. (2023). A d factor? Understanding trait distractibility and its relationships with ADHD symptomatology and hyperfocus. *PLOS ONE*, 18(10), e0292215. <https://doi.org/10.1371/journal.pone.0292215>
11. Osborne, J. B., **Zhang, H.**, Carlson, M., Shah, P., & Jonides, J. (2023). The association between different sources of distraction and symptoms of attention deficit hyperactivity disorder. *Frontiers in Psychiatry*, 14. <https://doi.org/10.3389/fpsy.2023.1173989>

12. Fansher, M., Adkins, T. J., Lalwani, P., Boduroglu, A., Carlson, M., Quirk, M., Lewis, R. L., Shah, P., **Zhang, H.**, & Jonides, J. (2022). Icon arrays reduce concern over COVID-19 vaccine side effects: A randomized control study. *Cognitive Research: Principles and Implications*, 7(1), 38. <https://doi.org/10.1186/s41235-022-00387-5>
13. **Zhang, H.**, Anderson, N. C., & Miller, K. F. (2022). Scene meaningfulness guides eye movements even during mind-wandering. *Attention, Perception, & Psychophysics*, 84(4), 1130–1150. <https://doi.org/10.3758/s13414-021-02370-6>
14. **Zhang, H.**, Abagis, T. R., & Jonides, J. (2021). The malleability of attentional capture. *Visual Cognition*, 29(9), 571–574. <https://doi.org/10.1080/13506285.2021.1915903>
15. **Zhang, H.**, Anderson, N. C., & Miller, K. F. (2021). Refixation patterns of mind-wandering during real-world scene perception. *Journal of Experimental Psychology: Human Perception and Performance*, 47(1), 36–52. <https://doi.org/10.1037/xhp0000877>
16. **Zhang, H.**, Miller, K. F., Sun, X., & Cortina, K. S. (2020). Wandering eyes: Eye movements during mind wandering in video lectures. *Applied Cognitive Psychology*, 34(2), 449–464. <https://doi.org/10.1002/acp.3632>
17. **Zhang, H.**, Qu, C., Miller, K. F., & Cortina, K. S. (2020). Missing the joke: Reduced rereading of garden-path jokes during mind-wandering. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 46(4), 638–648. <https://doi.org/10.1037/xlm0000745>
18. **Zhang, H.**, Miller, K., Cleveland, R., & Cortina, K. (2018). How listening to music affects reading: Evidence from eye tracking. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 44(11), 1778–1791. <https://doi.org/10.1037/xlm0000544>

Under Review

* indicates shared first authorship.

1. Sellers*, J., **Zhang***, H., Jonides, J., & Lee, T. (2025). Does global slowing explain age effects in inhibitory control? OSF. https://doi.org/10.31234/osf.io/w7fp9_v1
2. Osborne, J., Sellers, J., **Zhang, H.**, Wang, S., Liberatore, S., Sripada, C., Shah, P., & Jonides, J. (2025). Delayed goal-directed processing underlies inhibitory control challenges in adult ADHD. OSF. https://doi.org/10.31234/osf.io/7mkt9_v2
3. **Zhang, H.**, & Miller, K. (2025). I'm trying to read here! How does irrelevant speech affect how you read? OSF. https://doi.org/10.31234/osf.io/gnxjw_v1
4. Molloy, M. F., Lee, T., Jonides, J., **Zhang, H.**, Sellers, J., Heathcote, A., Sripada, C., & Weigard, A. (2025). Joint cognitive models reveal sources of robust individual differences in conflict processing. OSF. https://doi.org/10.31234/osf.io/5axpj_v1
5. York, A. K., **Zhang, H.**, Sellers, J., Lee, T. G., & Jonides, J. (2025). Physiological evidence for the time-dependent resolution of response conflicts.

Book Chapters and Conference Proceedings

Underlined names indicate undergraduate research mentees.

1. Brar, E., **Zhang, H.**, & Jonides, J. (2025). Overt attentional suppression of highly salient onsets. *Vision Sciences Society Annual Meeting Abstract*, 25, 2731. <https://doi.org/10.1167/jov.25.9.2731>
2. **Zhang, H.**, York, A. K., & Jonides, J. (2024). Less salient, more capture: The curious case of abrupt onsets. *Vision Sciences Society Annual Meeting Abstract*. Vision Sciences Society Annual Meeting. <https://doi.org/10.1167/jov.24.10.1296>
3. Michal, A., Fansher, M., Sun, X., **Zhang, H.**, & Shah, P. (2022). Cognitive development: Applications to education. In A. O'Donnell, N. C. Barnes, & J. Reeve (Eds.), *The oxford handbook of educational psychology* (1st ed.). Oxford University Press. <https://doi.org/10.1093/oxfordhob/9780199841332.013.7>
4. **Zhang, H.**, & Jonides, J. (2021). Pre-trial gaze stability predicts momentary slips of attention. *ACM CHI '21 Workshop on Eye Movements as an Interface to Cognitive State*. <https://psyarxiv.com/bv2uc/>

Selected Presentations

Underlined names indicate undergraduate research mentees.

1. Brar, E., **Zhang, H.**, & Jonides, J. (2024, November). *Does a temporally predictable distractor facilitate visual search?* [Poster]. The Psychonomic Society's 65th Annual Meeting. New York City, NY, USA.
2. **Zhang, H.**, Weissman, D. H., & Jonides, J. (2024, November). *What's 'reactive' about proactive suppression?* [Talk]. The Psychonomic Society's 65th Annual Meeting. New York City, NY, USA.
3. **Zhang, H.**, York, A. K., & Jonides, J. (2024, May). *Less salient, more capture: The curious case of abrupt onsets.* [Talk]. VSS 2024. St. Pete Beach, FL, USA.
4. Zhou, W., York, A. K., **Zhang, H.**, & Jonides, J. (2024, May). *Assessing ADHD effects on working memory manipulation: Evidence from drift diffusion modeling.* [Poster]. Object Perception, Attention, and Memory (OPAM) Conference. New York City, NY, USA.
5. Brar, E., Jonides, J., & **Zhang, H.**, (2024, April). *Rejecting a temporally predictable salient distractor.* [Poster]. Undergraduate Research Opportunity Program (UROP) Symposium. Ann Arbor, MI, USA.
6. **Zhang, H.**, Sellers, J., Lee, T. G., & Jonides, J. (2023, November). *Modeling the temporal dynamics of visual attention.* [Talk]. The Psychonomic Society's 64th Annual Meeting. San Francisco, CA, USA.
7. **Zhang, H.**, & Jonides, J. (2023, July). *Pretrial stability predicts momentary lapses of attention.* [Talk]. Current Issues in Mind-Wandering Research Conference. Heidelberg, Germany.
8. **Zhang, H.**, Adkins, T., Lee, T., & Jonides, J. (2022, November). *How does the priority map change over time?* [Talk]. The Psychonomic Society's 63rd Annual Meeting. Boston, MA, USA.
9. **Zhang, H.**, Miyake, A., Shah, P., & Jonides, J. (2021, November). *Uncovering the structure of individual differences in distractibility.* [Talk]. The Psychonomic Society's 62nd Annual Meeting. Virtual Conference.
10. **Zhang, H.**, Anderson, N. C., & Miller, K. F. (2020, November). *Mind-wandering during scene perception: On the role of meaning and salience.* [Poster]. The Psychonomic Society's 61st Annual Meeting. Virtual Conference.
11. Hwang, Y., & **Zhang, H.**, (2020, May). *Predicting attention during mind-wandering using meaning and saliency maps.* [Poster]. The Association for Psychological Science Annual Meeting. Chicago, IL, USA.
12. **Zhang, H.**, Anderson, N. C., & Miller, K. F. (2020, April). *Scan-paths of mind-wandering during real-world scene perception.* [Graduate Student Research Award]. The Annual Meeting of the Midwestern Psychological Association (Conference Canceled Due to Covid-19).
13. **Zhang, H.**, Qu, C., Miller, K. F., & Cortina, K. S. (2019, November). *Reduced re-reading of garden-path jokes during mindless reading.* [Poster]. The Psychonomic Society's 60th Annual Meeting. Montreal, Québec, Canada.
14. **Zhang, H.**, Miller, K. F., Cortina, K. S., & Jiang, T. (2019, June). *Mind-wandering in college classrooms: A mobile eye-tracking study.* [Poster]. SARMAC XIII. Cape Cod, MA, USA.
15. Fischer, A., & **Zhang, H.**, (2019, May). *Examining the effect of word predictability during mindless reading.* [Poster]. The Association for Psychological Science Annual Meeting. Washington DC, USA.
16. **Zhang, H.**, & Shah, P. (2019, May). *What can iPhone's screen time tell about your cognitive functioning?* [Poster]. The Association for Psychological Science Annual Meeting. Washington, DC, USA.
17. **Zhang, H.**, Miller, K. F., & Sun, X. (2019, March). *Scan-paths of mind-wandering during video lectures.* [Poster]. The International Convention of Psychological Science. Paris, France.
18. **Zhang, H.**, & Miller, K. F. (2018, November). *How irrelevant speech affects reading: The role of word predictability.* [Poster]. The Psychonomic Society's 59th Annual Meeting. New Orleans, LA, USA.
19. Qu, C., & **Zhang, H.**, (2018, May). *All joking aside: Mind-wandering impairs processing of garden-path jokes.* [Poster]. The Association for Psychological Science Annual Meeting. New Orleans, LA, USA.
20. **Zhang, H.**, Miller, K. F., & Sun, X. (2018, May). *The wandering eyes: Mind-wandering during video lectures is associated with oculomotor behaviors.* [Poster]. The Association for Psychological Science Annual Meeting. San Francisco, CA, USA.

21. Fraija, N., Evans, M., **Zhang, H.**, & Miller, K. (2018, April). *Tracking attention in the classroom: An mobile eye-tracking study*. [Poster]. Undergraduate Research Opportunity Program (UROP) Symposium. Ann Arbor, MI, USA.
22. **Zhang, H.**, Miller, K. F., Cleveland, R., & Cortina, K. S. (2016, May). *How listening to music affects reading: Evidence from eye tracking*. [Poster]. The Association for Psychological Science Annual Meeting. Chicago, IL, USA.

Teaching and Mentoring Experience

PRIMARY INSTRUCTOR

EDUC 391: Educational Psychology and Human Development

09/2017 - 12/2017

PARTICIPATED IN COURSE DESIGN; TAUGHT WEEKLY LECTURES; GRADED ASSIGNMENTS AND EXAMS; HELD OFFICE HOURS

GRADUATE STUDENT INSTRUCTOR

PSYCH 111: Introduction to Psychology

01/2019 - 04/2019

TAUGHT THREE ONE-HOUR CLASSES PER WEEK; GRADED STUDENT ESSAYS AND EXAMS; HELD OFFICE HOURS

PSYCH 240: Introduction to Cognitive Psychology

09/2016 - 12/2016

TAUGHT THREE ONE-HOUR CLASSES PER WEEK; GRADED STUDENT ESSAYS AND EXAMS; HELD OFFICE HOURS

PSYCH 457: Research in Educational and Cross-Cultural Settings

2016 - 2020

GRADED STUDENT ESSAYS AND EXAMS; HELD OFFICE HOURS; SUPERVISED STUDENT RESEARCH PROJECTS

Global Course Connection: Beijing Normal University

2015 - 2019

SUPERVISED JOINT RESEARCH PROJECTS BETWEEN US AND CHINESE STUDENTS; ORGANIZED CULTURAL EXCHANGE ACTIVITIES

UNDERGRADUATE RESEARCH OPPORTUNITY PROGRAM (UROP) MENTOR

Mentored students: Madelyn Evans (2018), Nicole Fraija (2018), Yun-Gi Hwang (2019), Alexander Fischer (2019), Esha Brar (2023)

2018 - 2025

MENTORED UNDERGRADUATE STUDENTS CONDUCTING RESEARCH PROJECTS.

STAR (SCHOLARSHIP, TRANSFERABLE SKILLS, ACADEMIA & RESEARCH) SCHOLARS MENTOR

Mentored students: Brianna Westpfahl (2019), Michael Cloud (2019), Julliana Ramirez-Matias (2019), Rachel Kushner (2020), Ruby Zheng (2020), Skylar Brodnan (2020)

2018 - 2020

MENTORED UNDERREPRESENTED STUDENTS ON ACADEMIC RESEARCH ENGAGEMENT AND TRANSFERABLE SKILLS. MORE INFO:

[HTTPS://LSA.UMICH.EDU/PSYCH/UNDERGRADUATES/STAR-SCHOLARS-PROGRAM.HTML](https://lsa.umich.edu/psych/undergraduates/star-scholars-program.html)

Open-Source Software

- PupEyes: An Interactive Python Library for Eye Movement Data Processing

Grant-Writing Experience

Understanding Takeover Performance in Urgent Situations during Level-3 Driving

2025

UMTRI & MCITY INTEGRATION FUND, UNIVERSITY OF MICHIGAN

Funded

- Role: Conceptualization; original draft preparation; reviewing & editing

The Object Perception, Attention, and Memory (OPAM) Conference

2024

NATIONAL SCIENCE FOUNDATION

Funded

- Role: Conceptualization; original draft preparation; reviewing & editing

Toward a Psychological and Neural Model of Conflict Resolution

2024

NATIONAL SCIENCE FOUNDATION

Funded

- Role: Conceptualization; original draft preparation; formal analysis; reviewing & editing

Investigating Interference-Control in ADHD Using a Novel Forced-Response Method

R21, NATIONAL INSTITUTE OF MENTAL HEALTH

- Role: Conceptualization; original draft preparation; formal analysis; reviewing & editing

2023

Funded

Probing Attentional Allocation with a Novel Forced-Response Method

NATIONAL SCIENCE FOUNDATION

- Role: Conceptualization; original draft preparation; formal analysis; reviewing & editing

2023

Funded

Uncovering Mechanisms of Interference-Resolution with a Novel Forced-Response Method

NATIONAL SCIENCE FOUNDATION

- Role: Conceptualization; original draft preparation; formal analysis; reviewing & editing

2022

Not Funded

Dissecting Distractibility by the Capture of Attention

NATIONAL SCIENCE FOUNDATION

- Role: Original draft preparation; formal analysis; reviewing & editing

2021

Not Funded

Mitigating Distraction from External and Internal Sources

NATIONAL SCIENCE FOUNDATION

- Role: Original draft preparation; formal analysis; reviewing & editing

2020

Not Funded

Failure to Resist External and Internal Distraction in ADHD

R01, NATIONAL INSTITUTE OF MENTAL HEALTH

- Role: Formal analysis; original draft preparation; reviewing & editing

2019

Not Funded

Professional Service

OBJECT PERCEPTION, ATTENTION, AND MEMORY (OPAM) CONFERENCE ORGANIZER

- OPAM 31, November 16th 2023, San Francisco, CA, US
- OPAM 32, November 21th 2024, New York City, NY, US
- <https://opamconference.com/>

AD HOC REVIEWER

- Memory & Cognition
- NeuroImage
- Visual Cognition
- Cognitive Science
- Scientific Studies of Reading
- Frontiers in Psychiatry
- Psychological Research
- Cognition
- Scientific Reports
- Journal of Experimental Psychology: Human Perception and Performance
- PLOS One
- Journal of Memory and Language
- Neurobiology of Aging
- Behavior Research Methods
- Psychonomic Bulletin & Review
- Attention, Perception, & Psychophysics
- Traffic Psychology and Behaviour

References

John Jonides, Ph.D.

jjonides@umich.edu

EDWARD E. SMITH PROFESSOR OF PSYCHOLOGY AND NEUROSCIENCE; CO-DIRECTOR, FUNCTIONAL MRI CENTER, UNIVERSITY OF MICHIGAN

Taraz G. Lee, Ph.D.

tarazlee@umich.edu

ASSISTANT PROFESSOR OF PSYCHOLOGY, UNIVERSITY OF MICHIGAN

Priti Shah, Ph.D.

DEPARTMENT CHAIR, ARTHUR THURNAU PROFESSOR OF PSYCHOLOGY, EDUCATION, AND INFORMATION, UNIVERSITY OF MICHIGAN

priti@umich.edu

Kevin F. Miller, Ph.D.

PROFESSOR OF PSYCHOLOGY AND EDUCATION, UNIVERSITY OF MICHIGAN

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