

Han Zhang

ASSISTANT RESEARCH SCIENTIST

University of Michigan Transportation Research Institute

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Research Interests

Attention; Mind-wandering; Distraction; Driving safety

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

DURING 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

BEFORE POSTDOC

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

RACKHAM GRADUATE SCHOOL, UNIVERSITY OF MICHIGAN

2019

\$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
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

- 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*. <https://doi.org/10.1037/xap0000532>
- 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>
- Zhang, H.**, Brar, E., York, A. K., & Jonides, J. (2025). Are abrupt onsets highly salient? *Journal of Experimental Psychology: Human Perception and Performance*. <https://doi.org/10.1037/xhp0001329>
- 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>
- Zhang, H.**, Sellers, J., Lee, T. G., & Jonides, J. (2024). The temporal dynamics of visual attention. *Journal of Experimental Psychology: General*. <https://doi.org/10.1037/xge0001661>
- 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>
- Zhang, H.**, Abagis, T. R., Steeby, C. J., & Jonides, J. (2024). Lingering on distraction: Examining distractor rejection in adults with ADHD. *Visual Cognition*, 0(0), 1–15. <https://doi.org/10.1080/13506285.2024.2328379>
- Zhang, H.**, Miller, K. F., & Jonides, J. (2024). How does mind-wandering affect distractor suppression? *Visual Cognition*, 0(0), 1–18. <https://doi.org/10.1080/13506285.2024.2347605>
- 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>
- 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/fpsyg.2023.1173989>
- 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>
- 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>
- Zhang, H.**, Abagis, T. R., & Jonides, J. (2021). The malleability of attentional capture. *Visual Cognition*, 29(9),

14. **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>
15. **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>
16. **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>
17. **Zhang, H.**, Miller, K. F., Cleveland, R., & Cortina, K. S. (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>

Preprints

1. 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
2. **Zhang, H.**, & Jonides, J. (2025). *PupEyes: An interactive python library for pupil size and eye movement data processing*. OSF. https://doi.org/10.31234/osf.io/h95ma_v1
3. York, A. K., **Zhang, H.**, Sellers, J., Lee, T. G., & Jonides, J. (2025). *Physiological evidence for the time-dependent resolution of response conflicts*.
4. **Zhang, H.**, Xin, S., & Miyake, A. (2024). *On the association between the self-control scale and social desirability measures: A meta-analysis and systematic review*. PsyArXiv. <https://doi.org/10.31234/osf.io/j4vy8>

Book Chapters and Conference Proceedings

1. **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>
2. Michal, A., Fansher, M., Xin, S., & **Zhang, H.** (2021). Cognitive development: Applications to education. In *The oxford handbook of educational psychology*. Oxford University Press.
3. **Zhang, H.**, & Jonides, J. (2021). Pre-trial gaze stability predicts momentary slips of attention. *EMICS '21*. ACM CHI '21 workshop on eye movements as an interface to cognitive state. <https://psyarxiv.com/bv2uc/>

Selected Presentations

1. Osborne, J., Sellers, J., **Zhang, H.**, Shah, P., & Jonides, J. (2024, November). *Applying computational modeling to forced-response conflict tasks in adults with ADHD*. [Poster]. The psychonomic society's 65th annual meeting. New york city, NY, USA.
2. **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.
3. York, A. K., **Zhang, H.**, Sellers, J., Lee, T. G., & Jonides, J. (2024, April). *Off-hand activation in forced-response conict tasks*. [Poster]. The annual meeting of the midwestern psychological association. Chicago, IL, USA.
4. Sellers, J., Adkins, T. J., **Zhang, H.**, Jonides, J., & Lee, T. G. (2023, November). *Causal evidence for the role of lateral prefrontal cortex in the time course of interference resolution*. [Poster]. Society for neuroscience conference 2023, washington, DC, USA.
5. **Zhang, H.**, Sellers, J., Lee, T. G., & Jonides, J. (2023, November). *Modeling the temporal dynamics of visual attention*. [Talk]. The psychonomic society's 64nd annual meeting. San francisco, CA, USA.
6. **Zhang, H.**, & Jonides, J. (2023, July). *Pretrial stability predicts momentary lapses of attention*. [Talk]. Current

issues in mind-wandering research conference. Heidelberg, germany.

7. **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.
8. **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.
9. **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.
10. **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).
11. **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.
12. **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.
13. **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.
14. **Zhang, H.** (2019, April). *Mind-wandering: What can we learn from eye-movements?* [Talk]. The combined program in education and psychology brownbag. Ann arbor, MI, USA.
15. **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.
16. **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.
17. **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.
18. **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.

Grant-writing Experience

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

NATIONAL SCIENCE FOUNDATION

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

2024

Funded

Toward a Psychological and Neural Model of Conflict Resolution

NATIONAL SCIENCE FOUNDATION

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

2024

Funded

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

Teaching 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

Open-Source Software

- PupEyes: An Interactive Python Library for Pupil Size and Eye Movement Data Processing (<https://github.com/HanZhang-psych/pupeyes>)

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
- <http://www.opam.net/>

UNDERGRADUATE RESEARCH OPPORTUNITY PROGRAM (UROP) MENTOR

- 2018 - current, mentored undergraduate students conducting research projects.
- Mentored students: Madelyn Evans (2018), Nicole Fraija (2018), Yun Gi Hwang (2019), Alexander Fischer (2019), Esha Brar (2023)

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

- 2018-2020, mentored underrepresented students on academic research engagement and transferable skills.
- <https://lsa.umich.edu/psych/undergraduates/star-scholars-program.html>

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
- Behavioral Research Methods
- Psychonomic Bulletin & Review
- Attention, Perception, & Psychophysics

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.

priti@umich.edu

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

Kevin F. Miller, Ph.D.

kevinmil@umich.edu

PROFESSOR OF PSYCHOLOGY AND EDUCATION, UNIVERSITY OF MICHIGAN