

Wayfinding Wonders

A newsletter made by the Wayfinding Lab at MSU



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Exploring Spatial Development

Meet Our Lab!

Ever wondered how kids learn to find their way around? That's what we're wondering too! We are the Wayfinding Lab at Montclair State University, led by Dr. Jennifer Yang and Dr. Laura Lakusta, who received funding from the National Science Foundation (NSF). Our research explores spatial development in children, specifically "wayfinding" skills.

Our team currently consists of 2 doctoral students, 3 master's students, and 5 undergraduate/professional research assistants. Together, we work together to learn about the mysteries of spatial navigation!

Through this newsletter, we'll be sharing fun facts about wayfinding, exciting research findings, and opportunities to get involved in our study. Whether you're a parent, educator, or just curious about how our minds work, this newsletter is for you!



How Kids Navigate the World!

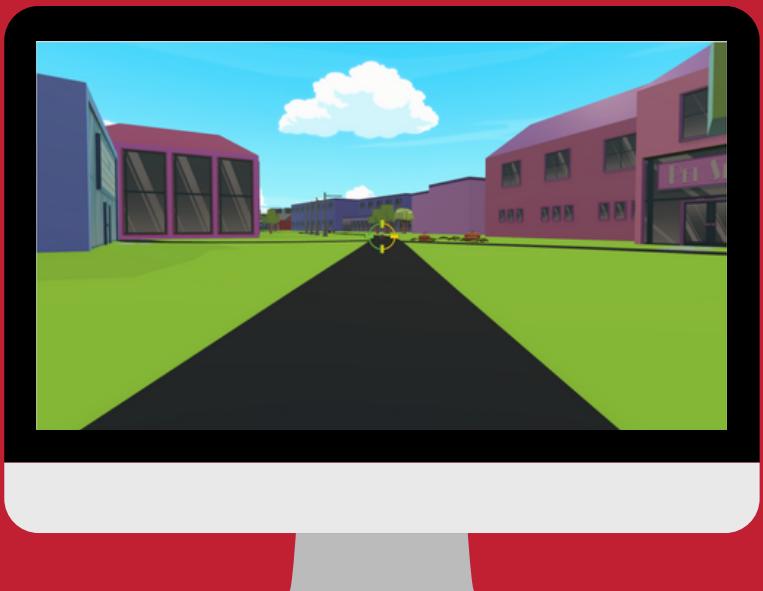
The Science of Wayfinding in Childhood

Have you ever wondered how children learn to find their way around? Whether it's navigating their way to school, finding the bathroom in a new house, or exploring a park, kids rely on a combination of skills to make sense of the world around them. This process is called wayfinding, and it's a critical part of spatial abilities.

Wayfinding involves using cues like landmarks ("There's the big tree!"), routes ("Go left at the swings, then straight past the bench"), and even mental maps to navigate spaces. It's more than just knowing where to go—it's about building confidence in understanding surroundings and solving problems independently.

Using Virtual Reality to Study Navigation

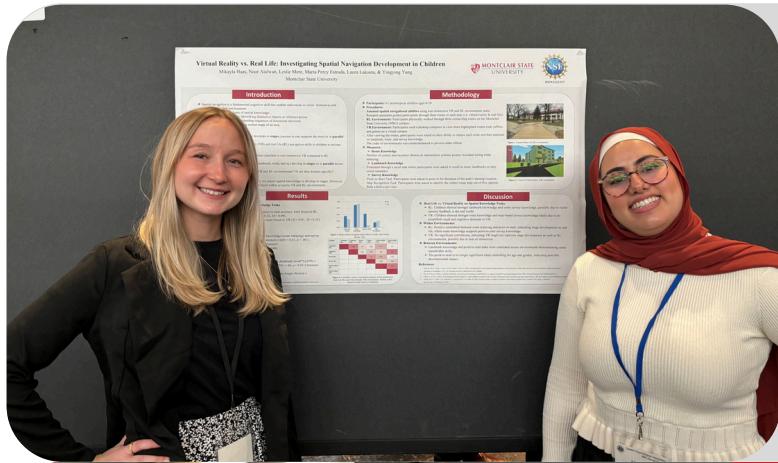
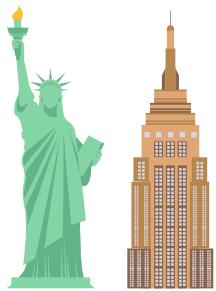
Did you know we use Virtual Reality (VR) to study navigation? (No headset required!) Kids use a mouse to move through the virtual MSU campus on a computer screen. Unlike real life, we can control the entire environment. It's like stepping into a scientific video game!





Research Highlights

Eastern Psychological Association Conference
New York City, March, 2025



This poster aimed to explore how children's spatial navigation abilities relate across real-life (RL) and virtual reality (VR) environments. We found that children performed better in RL for tasks involving landmarks and survey knowledge, likely due to sensory feedback, while VR supported better performance in route knowledge and map recognition. Some spatial skills transferred between environments, but VR showed fewer connections, suggesting it may not replicate RL navigation complexities fully.



This poster examined how age impacts children's development of wayfinding skills, including landmark, route, and survey knowledge. Results showed that older children recalled more landmarks and performed better on route and survey tasks, particularly pointing to a start location. However, map recognition did not improve with age, likely due to the difficulty of interpreting top-down views. These findings suggest that wayfinding skills develop progressively as children grow.



This poster explored how virtual environment design affects children's wayfinding behaviors. We found that children performed better on choice points with three options compared to two, possibly due to extra visual cues. They also struggled with decision points where the correct choice was a deviation from the previous path, and tended to continue straight rather than turn. This highlights how design features in virtual environments can impact navigation and provide insights for real-world applications, such as locating lost children.

Citations

1. Haas, M., Alalwan, N., Mere, L., Percy Estrada, M., Lakusta, L., & Yang, Y. (2025, March 6-8). Virtual Reality vs. Real Life: Investigating Spatial Navigation Development in Children. [Poster Presentation]. Eastern Psychological Association 2025 Annual Meeting in New York, New York.
2. Bayron, J., Haas, M., Gaspar, A., Latorre, A., Baidwan, E., Flakne, L., Lakusta, L., & Yang, Y. (2025, March 6-8). Finding Their Way: The Development of Real-Life Wayfinding Skills in Children. [Poster Presentation]. Eastern Psychological Association 2025 Annual Meeting in New York, New York.
3. Gasper, A., Haas, M., Lakusta, L., & Yang, Y. (2025, March 6-8). Investigating Design Influences on Children's Wayfinding Behavior in a Virtual Environment. [Poster Presentation]. Eastern Psychological Association 2025 Annual Meeting in New York, New York.

Help Us Understand How Kids Learn to Navigate!

Why Participate?

By joining our research, your child gets to be part of innovative science —helping us uncover the secrets of how kids learn to navigate the world. Plus, they'll get a fun, hands-on experience with research and a chance to explore a real college campus!



Who Can Participate?

- Children ages 6-10 years old

What's Involved?

- We conduct several fun and interactive activities that your child will love!
- The study is conducted in two sessions, one in-person (2 hours), and one online via Zoom (1 hour)

Where is it?

- Montclair State University

Compensation

- Children get \$75 for participating!



**Learn More and
Sign Up Here!**

<https://www.msuspatiallab.com/copy-of-spatial-skills-in-children>