



## VR and AR in Service of the Neurodiverse Population



[TravelingWiki Foundation](#)



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Munroe-Meyer Institute for *Genetics and Rehabilitation*

# We are one of the oldest, biggest and most comprehensive IDD care institution in the World

- Founded in 1919.
- Approximately 580 employees.
- More than 125,000 clinical visits/year.
- More than 40 services provided to clients from >30 states in the USA.
- More that 60 active research projects and >400 long-term trainees.



Our mission is to be world leaders in **transforming** the lives of all individuals with disabilities and complex health care needs, their families and the **community** through outreach, **engagement**, premier **educational programs**, innovative **research** and extraordinary **patient care**.



**In 2021 we opened our \$91M new home with unique features and services**

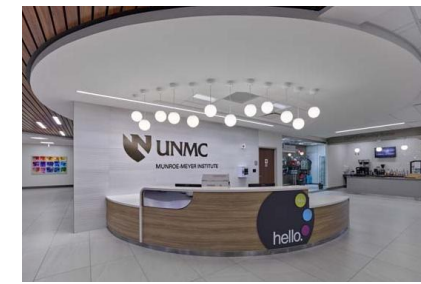
**“A fun place where healing happens”**

- 220,000 sq ft with 700 parking spots
- Full-size gymnasium, two pools, indoor water park, multiple playgrounds
- Sensory controlled areas with tunable lights
- “*Escape booths*” for overwhelmed children
- Meditation room
- Life skills teaching – One-bedroom apartment, teaching kitchen
- Video access for parents
- Kiln room for art programming (glass and clay kilns)
- Outdoor plaza, kinetic sculptures, fenced vegetable garden
- ... and many other unique features





# 2022 Healthcare Design Showcase Award



# In 2020 we established the AR/VR Program

- Collaborative space between computer programmers, engineers and clinicians to develop AR/VR products in service of neurodiverse populations.
- Our faculty and staff designed >20 AR/VR programs to date, all in Unity

## **REHABILITATION Programs:**

- Ice Cream Game
- Rocket Game
- Jar Factory Game
- Potion Brewing Game
- Rock Climbing Game
- Scanner Game
- Pirate Game
- Fishing Game
- Dragon Game
- Sandwich Game
- Sledgehammer Game

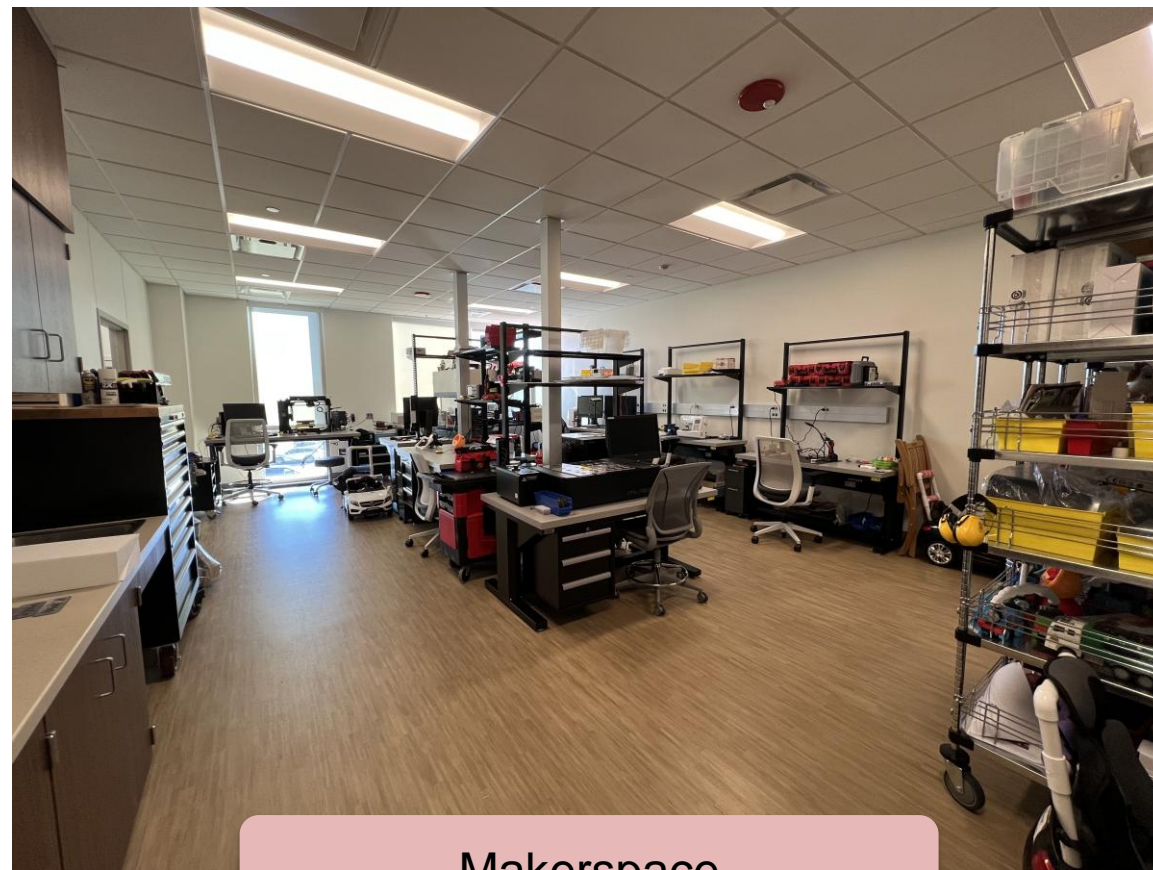
## **DESENSITISATION Programs :**

- Airplane Simulator
- Hair Cut Parlor
- Street Crossing





# VR/AR Program spaces



Makerspace



# VR/AR Program spaces



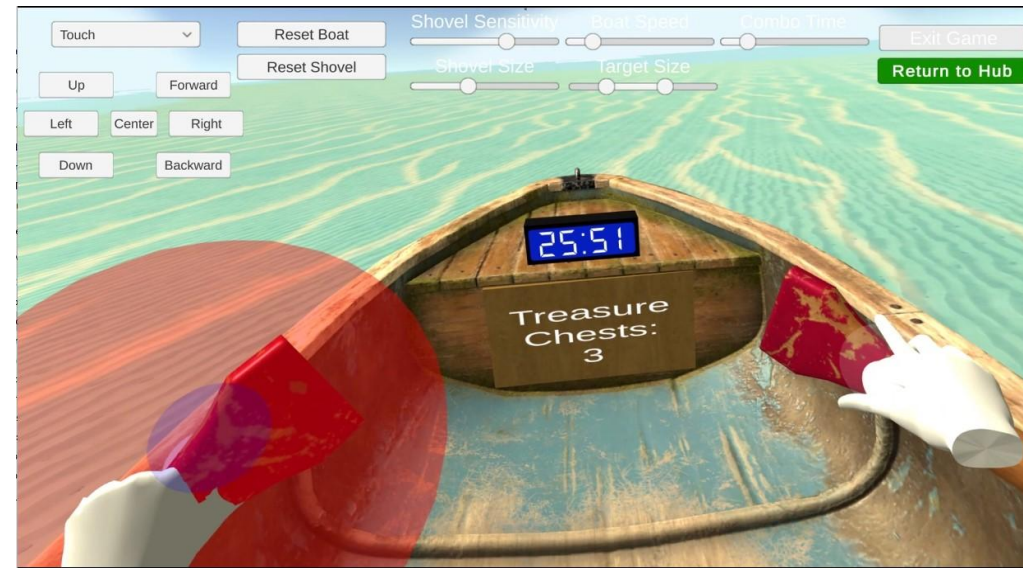
VR lab

Clinical space





# AR/VR Rehabilitation Programs



Exemplary screenshots of HABIT-VR Prototypes

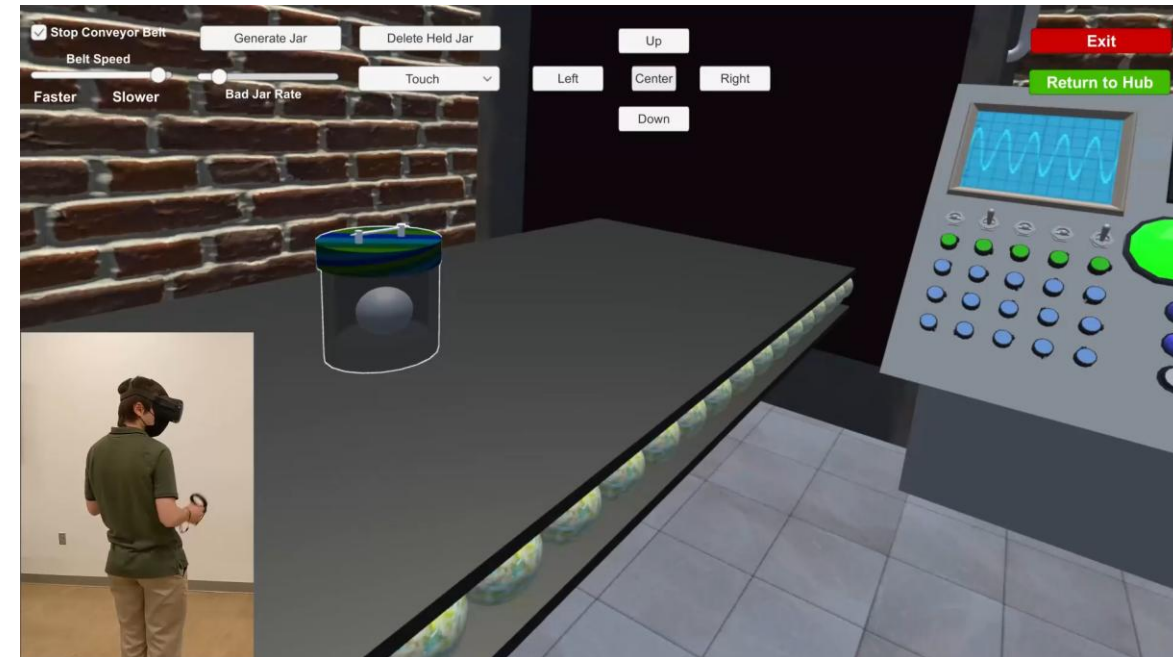




# AR/VR Rehabilitation Programs

Rocket game

Jar factory game



# Airplane simulator





# Airplane simulator



# Hair cut simulator



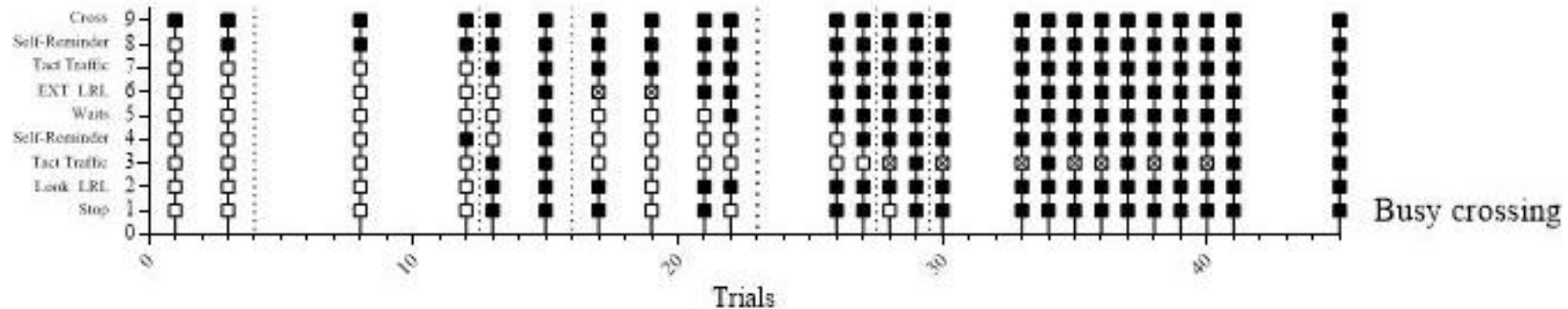


# Street Crossing Training

Pre-Training in VR



Post-Training in VR



# Other important notes:

- Validating in clinical, school and home setting
- Coupled with outcome research by our clinician-researchers (very promising results!)
- Runs on a gaming computer or Meta Quest VR headset
- Difficulty adjustable based on skill (for all programs)
- Trying to integrate biosensors and feedback
- Free of charge to anyone
- **We are looking for partners** to further develop these programs (**Travelingwiki** is simply amazing, and we plan to greatly expand our partnership!)
- **We are looking for a new director, as our director was snatched up by DOD ☹️**





# Learn more about us



Home page:

<https://www.unmc.edu/mmi/>

MMI Building video: <https://vimeo.com/560450619/a1fb34aa0d>

MMI 2023 annual report: <https://www.unmc.edu/mmi/about/annual-rpt/2023.pdf>

Healthcare design award: <https://healthcaredesignmagazine.com/featured-firms-projects/munroe-meyer-institute/#slide-1>

For a **building tour**, please contact Melonie Welsh, Director of Community Engagement at MMI ([melonie.welsh@unmc.edu](mailto:melonie.welsh@unmc.edu))



*We believe that we can measure the humanity of a society by how it takes care of individuals with IDD.*

