

# HECTOR TAYLOR

## PhD Candidate | Psychedelic Science, Virtual Reality & Multimodal Neuroimaging

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**RESEARCH PROFILE** Experimental researcher developing immersive-VR and multimodal neuroimaging methods to study body-related perception, consciousness, and chronic pain. Doctoral work bridges placebo-controlled psychedelic research, behavioral psychophysics, SPA-fNIRS, systemic physiology, and computational modeling.

## EDUCATION

### PhD Candidate in Psychology | Sep 2024 - May 2028 (expected)

*University of Zurich, Zurich, Switzerland*

- Doctoral research on psychedelics, virtual embodiment, multimodal neuroimaging, and chronic pain.
- Advisors: Milan Scheidegger and Felix Scholkmann.

### B.S. Psychology (Cognitive), magna cum laude | Aug 2019 - May 2021

*Arizona State University, Tempe, Arizona*

- Undergraduate thesis: "Visuomotor Recalibration to Multimodal Cues in Virtual Environments." Advisor: Michael McBeath.

### Undergraduate study in Psychology (transferred) | Aug 2016 - Dec 2018

*Northern Arizona University, Flagstaff, Arizona*

- Independent research on reproductive health in Bangladesh, Pakistan, and India. Advisor: Sanjam Ahluwalia.

## RESEARCH APPOINTMENTS

### Doctoral Researcher | Sep 2024 - present

*Psychedelic Research and Therapy Development Group, Psychiatric University Hospital Zurich / University of Zurich*

- Design and implement randomized, double-blind, placebo-controlled research on psilocybin, immersive VR, body-related perception, and pain.
- Develop behavioral tasks, psychophysical and computational estimands, acquisition plans, and governed analysis workflows for cross-institutional studies.

### Graduate Researcher | Feb 2025 - present

*Neurophotonics and Biosignal Processing Research Group, Biomedical Optics Research Laboratory, University Hospital Zurich / University of Zurich*

- Lead the integration of systemic physiology-augmented functional near-infrared spectroscopy (SPA-fNIRS) into current doctoral studies, including experimental design, multimodal synchronization, signal-quality validation, and analysis planning.

### Laboratory Manager / Research Assistant | Aug 2022 - Jul 2024

*Virtual Environment Navigation Laboratory, Brown University, Providence, Rhode Island*

- Managed lab operations and data collection for large-scale human crowd-motion experiments; developed computer-vision pipelines for pedestrian tracking and analysis.
- Mentored six undergraduate researchers, including two honors-thesis students.

## PUBLICATIONS

Yoshida, K., **Taylor, H.** & Warren, W. H. (2025). The influence of explicit and covert leaders on human crowd motion. *EPJ Web of Conferences*, 334, 04010. [10.1051/epjconf/202533404010](https://doi.org/10.1051/epjconf/202533404010)

Johnson-Glenberg, M. C., Jehn, M., Chung, C.-Y., Balanzat, D., Nieland Zavala, R., Apostol, X., Rayan, J., **Taylor, H.**, Kapadia, A., & Bartolomea, H. (2021). Interactive CovidCampus simulation game: Genesis, design, and outcomes. *Frontiers in Communication*, 6, 657756. [10.3389/fcomm.2021.657756](https://doi.org/10.3389/fcomm.2021.657756)

Johnson-Glenberg, M. C., Kosa, M., Balanzat, D., Nieland Zavala, R., Xavier, A., Rayan, J., **Taylor, H.**, Bartolomea, H., & Kapadia, A. (2021). COVIDCampus game: Making safer choices. In *2021 7th International Conference of the Immersive Learning Research Network* (pp. 1-8). IEEE. [10.23919/ILRN52045.2021.9459315](https://doi.org/10.23919/ILRN52045.2021.9459315)

Ahluwalia, S., & **Taylor, H.** (2019). Reproduction: Health: Bangladesh and Pakistan. *Encyclopedia of Women & Islamic Cultures*. [10.1163/1872-5309\\_ewic\\_COM\\_002202](https://doi.org/10.1163/1872-5309_ewic_COM_002202)

## CONFERENCE PRESENTATIONS

- 2026 Taylor, H.,** Ho, J. T., Scheidegger, M., Scholkmann, F., Lenggenhager, B., & Schweinhardt, P. *Quantifying psilocybin-related changes in body ownership using a parametric VR discrepancy task and SPA-fNIRS neuroimaging.* Poster presented at the 29th Annual Meeting of the Association for the Scientific Study of Consciousness, Santiago, Chile.
- 2025 Taylor, H.,** Ho, J. T., Scheidegger, M., Scholkmann, F., Lenggenhager, B., & Schweinhardt, P. *Virtual reality and psychoplastogens for chronic pain: Paving the way toward pharmacologically altered VR treatments.* Poster presented at the 28th Annual Meeting of the Association for the Scientific Study of Consciousness, Heraklion, Greece.
- 2024 Yoshida, K., Taylor, H., & Warren, W. H.** *The influence of explicit and covert leaders on human crowd motion.* Oral presentation at Traffic and Granular Flow **2024**, Lyon, France.
- 2024 Yoshida, K., Taylor, H., & Warren, W. H.** *Can covert and explicit “leaders” steer and split real human crowds?* Poster presented at the Vision Sciences Society Annual Meeting, St. Pete Beach, Florida. [10.1167/jov.24.10.1325](https://doi.org/10.1167/jov.24.10.1325)
- 2021 Taylor, H.** *Multimodal influences on slant perception in virtual environments.* Poster presented at the Arizona Psychology Undergraduate Research Conference, Tempe, Arizona.

## INVITED TALKS

- Jul 2025** *Virtual reality and psychoplastogens: Paving the way toward pharmacologically augmented VR treatments.* Qualia Research Institute and ALIUS Research Network Workshop on Altered States of Consciousness, Crete, Greece.
- May 2025** *Virtual reality and psychoplastogens: Paving the way toward pharmacologically augmented VR treatments.* Swiss Psychedelic Student Forum, University of Basel, Basel, Switzerland.
- Apr 2025** *Virtual reality and psychoplastogens: Paving the way toward pharmacologically augmented VR treatments.* Future of Education in Virtual and Augmented Reality XR Series, Arizona State University, online.

## LEADERSHIP, FUNDING & MENTORSHIP

### Co-President and Treasurer | Sep 2024 - present

*Psychedelic Research Organization Zurich (PROZ)*

- Lead an interdisciplinary public lecture and workshop program connecting psychedelic research, clinical practice, philosophy, ethics, and culture.
- Co-authored a successful University of Zurich Graduate Campus short-grant application supporting the Spring 2025 talk series; oversee finance, governance, partnerships, and event operations.

### Research Mentor | Aug 2022 - Jul 2024

*Virtual Environment Navigation Laboratory, Brown University*

- Mentored Brayson Freeman and Lucia Tian on honors theses and supervised undergraduate research by Christine Wu, Kira Kelly Clarke, Mahnoor Elahi, and Salma Eldeeb.

### Research Mentor / Lead Research Assistant | Aug 2019 - Aug 2021

*Perception, Ecological-Action, Robotics, and Learning Laboratory, Arizona State University*

- Mentored Dylan Board, Jeremy Cummins, and Morgan McAlphin.

### Senior Mentor and Student Research Leader | Aug 2017 - Aug 2019

*Research Apprenticeship Mentoring Program and Undergraduate Research Club, Northern Arizona University*

- Served as senior mentor and vice president; mentored Raumilya Smith and Tessa Fletcher.

## CLINICAL RESEARCH EXPERIENCE

### Clinical Research Coordinator | Jan 2022 - Aug 2022

*Adams Clinical Trials, Cambridge, Massachusetts*

### Clinical Data Quality Control Analyst | May 2021 - Jan 2022

*Celerion Clinical Trials, Tempe, Arizona*

## EARLIER RESEARCH EXPERIENCE

### Lead Research Assistant | Sep 2019 - May 2021

*Perception, Ecological-Action, Robotics, and Learning Laboratory, Arizona State University*

### Research Assistant | Mar 2020 - May 2021

*Embodied Games Laboratory, Arizona State University*

### Research Assistant | Apr 2020 - May 2021

*Mobile Experiential Technology through Embedded Optimization Research Studio, Arizona State University*

### Research Scholar | Aug 2017 - Jan 2019

*School of Women's and Gender Studies, Northern Arizona University*

## METHODS & TECHNICAL SKILLS

**Research methods** Immersive virtual reality; psychophysics; behavioral experiment design; SPA-fNIRS; systemic physiology; multimodal synchronization; computational modeling; computer vision; reproducible analysis workflows.

**Programming & software** Python, R, C#, Java, JavaScript; Unity, PyTorch, Git, MongoDB, SLURM, Blender.