Walter Philip Dych

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Education

University of Rochester — Rochester, New York, USA
Ph.D. in Brain and Cognitive Sciences — Starting January 2027

Binghamton University — Binghamton, New York, USA
Non-Matriculated Graduate Study — January 2025 – August 2026

University of Delaware — Newark, Delaware, USA
B.A. in Linguistics, Minor in European Studies — August 2019 – May 2023

Research Experience

University of Rochester — Rochester, New York, USA
Research Technician, Castellucci Lab — August 2026 – Present

- Construct motion-capture and physiological data collection systems for research on gesture–speech dynamics.
- Design experiments using Python and Tucker-Davis Technologies hardware.
- Analyze behavioral and physiological data using Python and R.

Binghamton University — Binghamton, New York, USA
Laboratory Manager, Lim Lab — January 2024 – August 2026

- Managed daily operations, participant recruitment, equipment, and undergraduate research assistants.
- Designed experiments using PsychoPy and MATLAB and analyzed behavioral and EEG data.
- Created research papers, posters, protocols, and training materials.

University of Delaware — Newark, Delaware, USA
Undergraduate Research Assistant, PhonLab — January 2022 – January 2024

- Developed tools to automate the annotation and analysis of co-speech gesture data.
- Presented research findings and trained lab members on preprocessing and analysis pipelines.

Skills

Programming: Python, R, MATLAB, C++, Java, JavaScript, SQL, HTML, CSS

Research: Experimental design, EEG, brain stimulation, eye tracking, pupillometry, motion capture, articulography, signal processing, statistical analysis, data visualization

Tools: PsychoPy, Qualtrics, Gorilla, ELAN, Praat, TDT hardware, PyTorch, TensorFlow, OpenCV

Languages: English and Dutch (native); Italian and German (B2); Spanish and Mandarin (B1)

Manuscripts Under Review

Dych, W. P., Ikeda, M., Lee, M. Y., & Lim, S.-J. Bottom-up noise enhancement versus top-down time compression deficits: Independent effects on neural speech tracking and memory. *Manuscript under review.*

Dych, W. P., Zi, L., & Lim, S.-J. Uncontrolled hardware variation introduces limits on timing precision in online auditory experiments. *Manuscript under review.*

Conference Presentations

Ikeda, M., **Dych, W. P.**, & Lim, S.-J. (2025). Impact of time-compression and background noise on content memory recall and neural tracking of speech. *8th International Conference on Auditory Cortex*, Maastricht, Netherlands.

Ikeda, M., **Dych, W. P.**, & Lim, S.-J. (2025). Acoustic degradation of speech through time compression and background noise independently affects content memory and neural tracking of speech. *Society for the Neurobiology of Language*, Washington, D.C., United States.

Dych, W. P., Garvin, K., & Franich, K. (2024). A toolkit for automating co-speech gesture data annotation and analysis. *Second International Multimodal Communication Symposium*, Frankfurt, Germany.

Dych, W. P., Garvin, K., & Franich, K. (2024). The MultiGest tool: Creating multimodal phonetic corpora for co-speech gesture research. *CorpusPhon*, Seoul, South Korea.

Dych, W. P., Garvin, K., & Franich, K. (2023). Comparing manual versus semi-automated methods for the coding of co-speech gestures. *20th International Congress of Phonetic Sciences*, Prague, Czech Republic.

Dych, W. P. (2022). Gesture magnitude mapping in Medumba: A Grassfields Bantu language. *University of Delaware Summer Scholars Symposium*, Newark, DE, United States.