

Baitong (Barbara) Mu

EDUCATION

Wake Forest University

MS in Psychology

08/2025 - 05/2027 (Expected)

North Carolina, US

University of Edinburgh

BSc. (Hons) Psychology - 4 Years | GPA: 3.61/4.00

09/2021 - 05/2025

Edinburgh, Scotland, UK

GRE: 333(V163-91%; Q170-92%) + AW4.5-83%

RESEARCH INTERESTS

Cognitive and Neural Mechanisms of Visual Attention, Working Memory, Event Memory; Eye-tracking, Neuroimaging, Computational Modeling

CONFERENCE PRESENTATIONS

- **Mu, B.** & Stilwell, B. T. (2026, November). Triggered Distractor Suppression: Learned Suppression Without Initial Overt Capture. Poster presentation accepted at the 67th Annual Meeting of the Psychonomic Society, San Diego, CA, US.
- **Mu, B.** & Stilwell, B. T. (2026, November). Triggered Distractor Suppression: Learned Suppression Without Initial Overt Capture. Poster presentation accepted at the 34th Object Perception, Attention, and Memory (OPAM) Conference, San Diego, California, US.
- Sun, H., **Mu, B.**, & Sali, A. W. (2026, November). Attentional Flexibility as an Internal Context: A Temporally Graded Context-Dependent Priming Effect. Poster presentation accepted at the 34th Object Perception, Attention, and Memory (OPAM) Conference, San Diego, California, US.
- **Mu, B.** & Stilwell, B. T. (2026, May). Generalization of Learned Distractor Suppression. Poster presentation at the Vision Sciences Society Annual Meeting, Tampa, FL, US.
- **Mu, B.** & Stilwell, B. T. (2026, March). Skill-based Learning in Distractor Suppression Across Visual Context. Poster presentation at the 2026 North Carolina Cognition Conference (NCCC), Durham, NC, US.
- Sun, H., **Mu, B.**, & Sali, A. W. (2026, March). Attentional States as Psychological Context for Long-term Memory: An Examination of Encoding Specificity. Poster presentation at the 2026 North Carolina Cognition Conference (NCCC), Durham, NC, US.
- **Mu, B.**, Ansari, S., Xi, Y., & Lawrence, A. D. (2025, March). Cultural Variation in Episodic Memory and Event Cognition. Oral presentation at the British Psychological Society Scottish Undergraduate Conference, Dundee, UK.

MANUSCRIPTS IN PREPARATION

- **Mu, B.** & Stilwell, B. T. (In Preparation). *Suppression without overt selection: Learned distractor suppression does not depend on initial oculomotor capture.*

RESEARCH OUTPUTS

- Sanaee, S.[†], **Mu, B.**[†], Tang, C. K.-M., Caslick-Waller, Z. R. G., Li, W., Gao, T., & Rodriguez Cruces, R. (2025). Parallel GNN-LSTM model predicting working memory involvement during language and emotion processing. Neuromatch. (†Co-first authors; <https://doi.org/10.5281/zenodo.15126506>)

RESEARCH EXPERIENCE

Graduate Researcher

Advisor: Dr. Brad T. Stilwell and Dr. Anthony W. Sali

My work at Wake Forest examines how attentional control and

Thesis Project: The fate of the negative attentional template

- Research question: Does using a color as a to-be-avoided template discard, preserve, or refine its representation in visual working memory?
- Methods: Designed a cued visual search task with eyetracking and a continuous-report color probe, measuring the fidelity of a negative attentional template before and after visual search; Analyze with hierarchical Bayesian mixture modelling of report errors with parameter-recovery simulation; reaction-time and fixation-based measures of template guidance.

Project: Mechanism of Learned Distractor Suppression: Does Attentional Capture Drive Suppression?

- Research question: Does attentional capture by a salient distractor selectively drive suppression learning for that distractor on subsequent trials, and is overt selection of the distractor necessary for suppression to emerge?

- **Methods:** Designed and programmed a novel dual-distractor eye-tracking paradigm with two equally salient color singletons to dissociate capture-driven from exposure-driven suppression learning using MATLAB/ Psychtoolbox
- **Results:** Suppression emerged regardless of whether the salient distractor was fixated on its first appearance, providing no evidence that suppression learning is initiated by overt selection

Project: Skill-based Generalization of Learned Distractor Suppression Across Visual Contexts 09/2025 – 05/2026

- **Research question:** Does learned distractor suppression acquired in one task transfer to a task with different visual contexts?
- **Methods:** Programmed a gaze-contingent Visual Search task (VST), a Rapid Serial Visual Presentation (RSVP) task and an additional singleton paradigm (ASP) using MATLAB/Psychtoolbox to test cross-task skill transfer; Fit mixed-effects models and Hidden Markov models to eye-tracking data to extract individual learning trajectories and features across tasks
- **Results:** Found mixed evidence for transfer of learned distractor suppression across visual contexts

Skills: Experiment design, Eye-tracking (EyeLink 1000 Plus), Continuous-report memory probes, Gaze-contingent paradigm, Hierarchical Bayesian mixture modelling, Parameter-recovery simulation, HMM, Mixed-effects modeling, R Language, MATLAB/Psychtoolbox

Graduate Researcher

Advisor: Dr. Anthony W. Sali

10/2025 – present
Wake Forest University

Project: The Influence of Attentional Flexibility on Implicit Repetition Priming 01/2026 – present

- **Research question:** Do attentional states induced by statistical regularities in shift/hold cue probabilities modulate implicit repetition priming?
- **Methods:** Designed an RSVP paradigm using categorical image cues with noise masking and digit classification to embed target repetitions across blocks with 70/30 shift-hold probability manipulation
- **Results:** Repetition priming was larger when items were re-encountered in a congruent attentional flexibility context, and only for items encoded before performance stabilized, suggesting an attentional state can serve as an internal retrieval context

Project: Learned Attentional Flexibility and Encoding Specificity 10/2025 – 01/2026

- **Research question:** Do learned internal attention states (shifting vs. holding) function as psychological contexts that facilitate memory retrieval through encoding specificity when reinstated at test?
- **Methods:** Designed an interleaved RSVP paradigm using MATLAB/Psychtoolbox to induce distinct attentional states in young adults; Generated standardized word stimuli from the SCOPE database; conducted repeated-measures ANOVA on shift costs to validate state induction
- **Results:** State induction was successful, but reinstating the encoding state did not improve explicit retrieval; the null motivated a redesign targeting implicit priming with image stimuli

Skills: Experiment design, RSVP paradigms, MATLAB/Psychtoolbox, and Repeated-measures ANOVA

Research Intern

Advisor: Prof. Roberto Cabeza and Dr. Maxi Becker

06/2026 – present
Duke University

Project: Encoding Gaze Dynamics and Neural Correlates of Subsequent Memory for Perceptually Ambiguous Images

- **Research question:** How does active sampling of diagnostic evidence support the transition from perceptual uncertainty to recognition of two-tone (Mooney) images, and how does this process relate to subsequent memory?
- **Methods:** Developed a web-based ROI annotation interface and derived gaze-independent diagnostic regions from 7 human raters with inter-rater reliability analyses; Analyzed pre-solution fixation dynamics, gaze similarity across time windows and response conditions (*eyesim*), image-level saliency (SaliencyToolbox) and contour complexity (ImagingToolbox), as predictors of recognition and memory success.
- **Interim Results:** Early diagnostic sampling predicted recognition, whereas late gaze convergence tracked decision commitment rather than accuracy; early diagnostic sampling showed no direct effect on 5-day delayed memory, with its association with memory mediated by successful recognition.

Skills: Gaze pattern analysis, time-resolved gaze similarity analysis, computational image analysis, Python, R, MATLAB.

Research Intern

Advisor: Dr. Maureen Ritchey and Dr. Valentina Krenz

05/2026 – present
University of California, Los Angeles (Remote)

Project: Posterior Medial Contributions to Event Transitions and Subsequent Memory

- **Research question:** Does posterior medial (PM) network engagement at event transitions during encoding predict the quality of subsequent memory for multi-featural events?
- **Contribution:** Reviewed MRIQC and fMRIPrep outputs to identify artifacts and assess head motion for quality assessment and control; Established motion-based exclusion criteria for the dataset, including diagnostics for task-correlated motion in overt-recall runs; Authored a step-by-step QC protocol documenting the full pipeline for lab-wide use
- **In progress:** Implementing univariate and multivariate (regularized regression) subsequent-memory analyses testing whether hippocampal and PM offset activity dissociate the binding of event features from their mnemonic specificity.

- Skills: MRIQC, fMRIPrep, fMRI quality control and assessment, RSA, protocol documentation, Jupyter Notebook

Undergraduate Dissertation Project

Advisor: Prof. Andrew D. Lawrence

09/2024 – 04/2025

Final-Year Dissertation Project: Cultural Variation in Event Segmentation and Episodic Memory

- Research question: How does cultural variation in thinking style and self-construal influence event perception and episodic memory during naturalistic movie viewing?
- Methods: Built an event-segmentation, free-recall, and cultural-measure protocol (Analysis-Holism Scale; Auckland Individualism and Collectivism Scale) in Qualtrics with JavaScript around an 8-minute movie *Bang! You're Dead*; conducted path mediation analysis to explore the serial mediation relationship
- Results: Holistic thinking styles were associated with reduced recall details; no significant cultural-group differences in event segmentation and memory
- Skills: Experiment design, Cross-cultural research, Qualtrics Experiment Builder, R Language, Path mediation analysis

NeuroMatch Academy & Impact Scholar Program

Advisor: Dr. Raul Rodriguez Cruces

07/2024 – 05/2025

Project: Working-Memory Network Generalization Across Cognitive Domains

- Research question: How does WM neural network involvement generalize across cognitive domains, including language (story comprehension vs. math language) and emotion (neutral vs. fear)
- Methods: Built a Multilayer Perceptron (MLP) classifier on HCP fMRI data to classify WM load (0-back vs. 2-back); Assessed cross-task generalization by inputting BOLD signals from language and emotion subtasks into the whole-brain and frontoparietal networks; extended the pipeline into a parallel GNN-LSTM model to characterize the frontoparietal and default mode networks dynamics during high-level cognitive processing
- Results: MLP classifier achieved 81% accuracy; WM demand classification generalized to language tasks, with math stimuli predicted as high demand and story-based stimuli as low demand; classification was less confident in emotion subtasks, potentially due to the rapid amygdala-mediated processing reducing reliance on the executive WM system
- Skills: Python, MLP, LSTM, GNN, fMRI analysis (GLM), and HCP dataset

INTERNSHIPS & WORKING EXPERIENCE

Research Assistant (with Lab Manager Duties)

08/2025 – present

Supervisor: Dr. Brad T. Stilwell

Wake Forest University

- Assist in setting up and validating a new EEG system (BrainVision), including hardware configuration, impedance testing, trigger synchronization with PsychToolbox, and pilot recordings.
- Collect behavioral and eye-tracking data (EyeLink 1000 Plus) across multiple lab projects; coordinate recruitment, scheduling, and session logistics
- Prepare and maintain IRB materials, including submissions, amendments, continuing reviews
- Train and supervise undergraduate research assistants on research procedures, participant interactions, and lab policies

Reviewer

02/2025 – present

Student Grant Competition and APS Awards

Washington, D.C., US (Remote)

- Reviewed research proposals and projects, evaluating theoretical framing, methodological rigor, feasibility, motivation and hypothesis clarity, implications and contributions
- Provided constructive, evidence-based reviewer comments to help applicants strengthen study design and writing

Ad Hoc JOURNAL REVIEWING

Journal of Experimental Psychology: Human, Perception, & Performance

SCHOLARSHIP & AWARDS

Edinburgh Award (Student Development)

04/2025

Wake Forest University Graduate Scholarship (\$61,145 per year)

08/2025 – 05/2027

Professional Development Award at Object Perception, Attention, and Memory (OPAM) Conference (\$500)

11/2026

TECHNICAL SKILLS & INTERESTS

- Languages: English, Mandarin
- Programming: R, MATLAB, Python; Git-based reproducible workflows
- Data Analysis & Modeling: Mixed-effects/Multilevel modeling, Repeated measures ANOVA, (multilevel) Path mediation, hierarchical Bayesian mixture modelling, Gaze-similarity analysis, GLM, RSA, HMM, MLP, LSTM, GNN on eye-movement and fMRI data