Stanford

Alexandria McPherson

Postdoctoral Scholar, Psychology

Curriculum Vitae available Online

Bio

BIO

Alexandria (Xan) McPherson is a postdoctoral researcher in the Department of Psychology at Stanford University. Xan completed her PhD in Applied Physics at the University of Washington, I-LABS with Dr. Samu Taulu as her advisor. There, she developed improvements to the methodology and instrumentation for on-scalp MEG systems, such as OPM-MEG, with the goal of implementing reliable and robust methods for OPM data collection and processing. During her postdoc, she is continuing her work on OPM-MEG systems with Dr. Laura Gwilliams to further the study of speech comprehension.

PROFESSIONAL EDUCATION

- PhD, University of Washington , Applied Physics (2025)
- Master of Science, University of Washington (2024)
- BS, Colorado School of Mines , Engineering Physics (2021)

STANFORD ADVISORS

- Laura Gwilliams, Postdoctoral Faculty Sponsor

LINKS

- LinkedIn: www.linkedin.com/in/alexandria-mcpherson-phd-676651162

Publications

PUBLICATIONS

- **Noise Optimization of Basic Signal Component Extraction for Cryogenic and On-Scalp Magnetoencephalography (MEG).** *bioRxiv : the preprint server for biology*
  McPherson, A., Sanchirico, S., Xu, A., Larson, E., Kaestner, M., Turner, W., Gwilliams, L., Taulu, S.
  2026

- **Refined signal space separation methods for on-scalp MEG systems.** *Physics in medicine and biology*
  McPherson, A., Fahmy, I., Larson, E., Yeo, W., Holmes, N., Taulu, S.
  2025; 70 (13)

- **Excess carrier concentration in silicon devices and wafers: How bulk properties are expected to accelerate light and elevated temperature degradation** *MRS ADVANCES*
  McPherson, A. N., Karas, J. F., Young, D. L., Repins, I. L.
  2022; 7 (21): 438-443