

Mackenzie V. Wise, B.S.

Reno, Nevada, USA

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PERSONAL

Birth Place: Palo Alto, California, USA

Citizenship: USA

EDUCATION

Doctoral Student

University of Nevada, Reno, NV, USA. *August 2019 - Present*

Bachelor of Science, Psychology

University of Oregon, Eugene, OR, USA. *January 2014 – June 2015*

Psychology for Transfer

Lane Community College, Eugene, OR, USA. *September 2013 – December 2013*

Foothill College, Los Altos Hills, CA, USA. *September 2011 – August 2013*

MEMBERSHIP

Cognitive Neuroscience Society (CNS). *November 2018 – present*

CORE COMPETENCIES

Specializations

- Electrophysiology, visual processing, neural anatomy, psychology, epilepsy, biopsychology, neurology.

Imaging Tools

- EEG, ERG, AOSLO, Transcranial Electrical Stimulation (TES), Transcranial Magnetic Stimulation (TMS), Photogrammetry, Bounded Electrical Impedance Tomography.

Review and Analysis Tools

- Net Station, GeoSource, Modal Image Pipeline, MatLab, EEGLab, E-Prime, SPSS.

RESEARCH AND TRAINING

Graduate Research Assistant

University of Nevada, Reno, NV, USA. *August 2019 - Present*

- Crognale Vision Lab
- Performs EEG, ERG, and AOSLO to investigate visual evoked potentials at the level of the cortex, the retina, and individual photoreceptors.

Clinical Regulatory Coordinator

Oncology Research, Intermountain Healthcare, Salt Lake City, Utah. *May 2019 – August 2019.*

- Managed the regulatory operations of oncological stage 2 & 3 clinical trials surrounding the use of novel drug treatments in clinical cancer populations.

Clinical Research Coordinator

Clinical Operations, Resolution Bioscience, Redmond, Washington. *August 2018 – April 2019*

- Managed the operations of Resolution Bioscience's clinical trials surrounding the use of liquid biopsy ctDx assays in clinical cancer populations.

Clinical Research Coordinator & Electroneurodiagnostic Technologist 1

Department of Neurology, Regional Epilepsy Center, Harborview Medical Center, University of Washington, Seattle, Washington. *August 2015 – August 2018*

- CRC, END Tech, PI Proxy, & Research Assistant to and under the supervision of Mark D. Holmes M.D.
- Conducted an industry sponsored FDA full-IDE safety and feasibility trial using transcranial direct current stimulation (tDCS) and dense-array EEG to apply non-invasive electrical stimulation in a clinical sample of adult refractory epilepsy patients as to temporarily reduce cortical excitability of each patient's individually identified epileptogenic zone.
- Managed screening, recruitment, consent, session preparation, and all session runs – including all data collection and session follow-up.
- In sessions, applied dEEG electrodes to the scalp, collected dEEG data, monitored for seizures, ran neuropsychological testing, and applied electrical stimulation.
- Supported data management, data review, and data analysis.
- Participated in the building of 3D individualized head models, supported the interictal spike identification and review process in dEEG data recording files, and independently source localized identified spikes to create treatment plans for each patient.
- Developed study level protocols, SOPs, case report forms, and patient reports.
- Managed all IRB reporting, including maintenance of IRB approval.
- Managed data and safety reporting, sponsor reporting, and preparation and participation in sponsor audits, and regulatory inspections.
- Provided support for investigational device QC and laboratory supply inventory and management.
- Concurrently managed all other research projects approved under the supervision of Dr. Holmes.
 - Studies pertained to non-invasive source localization for in-patient and out-patient epilepsy populations using dEEG.
- Independently ran and collected data to examine potential localization of generalized epilepsy in a primary generalized adult epilepsy sample.

Science Team Member

Electrical Geodesics, Inc., Eugene, Oregon. *June 2015 – August 2015*

- Integral personnel in the data collection of a preliminary tDCS/TMS motor pilot study.
- Applied electrodes, collected bounded electrical impedance tomography (bEIT) data, and assisted in TMS and tDCS stimulation.
- Aided in the development of individualized TMS and tDCS stimulation plans through

identification the right-hand center of the motor cortex in 3D models.

Internship

Brain Electrophysiology Lab, Electrical Geodesics, Inc., Eugene, Oregon. *June 2014 – June 2015*

- Undergraduate Dense-Array Electroencephalography (dEEG) intern.
- Ran data collection of dEEG studies surrounding the principals of the STROOP test, Go/No-Go, and Verbal Generation Tasks.
- Participated in data entry and data review and ERP generation.
- Managed the orientation and training of new interns.

FUNDED RESEARCH

- Co-registration of MRI and Dense-Array EEG to Localize Epileptiform Discharges. Funded by Electrical Geodesics, Inc, Eugene, OR, USA for salary support of **Mackenzie V. Wise** (100% FTE plus indirect costs and benefits). PI: Mark D. Holmes, MD, Research Assistant: **Mackenzie V. Wise**. 2015 – 2018
- Direct Current Electrical Stimulation Therapy for Epilepsy. Funded by Electrical Geodesics, Inc., Eugene, OR, USA for .025% FTE funding for PI (salary, benefits, and indirect costs) and 100% FTE funding for **Mackenzie V. Wise** (salary, benefits, and indirect costs) for this and the above study. PI: Mark D. Holmes, MD, Research Assistant: **Mackenzie V. Wise**. 2015 – 2018

MANUSCRIPTS – ACCEPTED, UNDER REVIEW, or IN PREPARATION

1. **Wise, Mackenzie V.**; Caplovitz, Gideon P.; Besio, Walter; Crognale, Michael A. “Suitability of Tripolar Concentric Ring Electrodes (TCREs) for the Study of The Human Visual System”. *In preparation, 2020*.
2. Holmes, Mark D.; Feng, Rui; **Wise, Mackenzie V.**; Ma, Chengxin; Ramon, Ceon; Wu, Jingsong; Luu, Phan; Hou, Jidong; Pan, Li; Tucker, Don. “Acute Suppression with Slow-Pulsed Transcranial Electrical Stimulation”. *Annals of Clinical and Translational Neurology*, Accepted 8 OCT 2019. doi: [10.1002/acn3.50934](https://doi.org/10.1002/acn3.50934)
3. Ramon, Ceon; Holmes, Mark D.; **Wise, Mackenzie V.**; Tucker, Don; Jenson, Kevin; Kinn, Samuel R., “Oscillatory Patterns of Phase Cone Formations near to Epileptic Spikes Derived from 256-Channel Scalp EEG Data”. *Computational and Mathematical Methods in Medicine*, vol. 2018, Article ID 9034543, 15 pages, 2018. <https://doi.org/10.1155/2018/9034543>.
4. Holmes, Mark D; Luu, Phan; **Wise, Mackenzie V.**; Tucker, Don. “Spatial and Temporal Dynamics of the Interictal Epileptiform Spike Complex”. *In preparation, 2018*.

ABSTRACTS

1. **Wise, Mackenzie V.**; Foster, Gabriel; Peterson, Erica; Caplovitz, Gideon Paul; Crognale, Michael A. “Tri-polar EEG is well suited for the study of the visual system”. *Poster presented at The Vision Sciences Society Annual Meeting, Virtual Online, May 15, 2019*.

2. Hou, Jidong; Holmes, Mark D.; **Wise, Mackenzie V.** “Epileptic Networks Monitoring Based on Multi-Step EEG Source Localization” *Poster presented at The American Epilepsy Society Annual Meeting, New Orleans, LA, USA. Dec 1, 2018.*
3. **Wise, Mackenzie V.**; Holmes, Mark D; “Spatial Temporal Dynamics of Spike-Wave Complexes in Primary Generalized Epilepsy”. *Poster presented at The American Epilepsy Society Annual Meeting, New Orleans, LA, USA. Dec 1, 2018.*
4. Hou, Jidong; Tucker, Don; Holmes, Mark D.; **Wise, Mackenzie V.**; Gunn, Amanda; Ramon, Ceon; Luu, Phan. “Cortical Excitability Assessment with Local Phase Synchronization for Epilepsy and its Treatment”. *Poster presented at The American Epilepsy Society Annual Meeting, Washington DC, USA. Dec 2, 2017.*
5. Tucker, Don; Holmes, Mark D.; **Wise, Mackenzie V.**; Luu, Phan; Ramon, Ceon; Hou, Jidong; Gunn, Amanda. “Acute Suppression of Interictal Discharges with Slow (0.5 Hz) Pulses Geodesic Transcranial Electrical Neuromodulation (GTEN)”. *Poster presented at The American Epilepsy Society Annual Meeting, Washington DC, USA. December 2, 2017.*
6. Holmes, Mark D.; Luu, Phan; **Wise, Mackenzie V.**; Ramon, Ceon; Tucker, Don. “Nodes and Networks: Mapping the Spatiotemporal Dynamics of the Interictal Spike Complex”. *Poster presented at The American Epilepsy Society Annual Meeting, Washington DC, USA. Dec 2, 2017.*
7. Ramon, Ceon; Holmes, Mark D.; Tucker Don; Jenson, Kevin; **Wise, Mackenzie V.**; Kinn, Samuel. “EEG Phase Cone Oscillations Near to Epileptic Spikes Derived from 256-Channel Scalp EEG Data”. *Poster presented at The International Conference on Basic and Clinical Multimodal Imaging (BaCi 2017), Bern, Switzerland, August 3, 2017.*
8. Rasmussen, Miranda; **Wise, Mackenzie V.**; Luu, Phan; Holmes Mark D.; Tucker, Don. “Temporal and Spatial Dynamics of Interictal Activity Measured with 256 Channel EEG. Brain Initiative Meeting”. *Poster presented at Mayo Clinic, Rochester, MN, USA. April 1-3, 2017.*
9. Rasmussen, Miranda; **Wise, Mackenzie V.**; Luu, Phan; Tucker, Don; Holmes, Mark D. “Epileptic Source Localization Comparing High-Resolution Individual Head Models Against Conformal Atlas and Standard Atlas Head Models with Dense Array EEG”. *Poster presented at The American Clinical Neurophysiology Society Meeting. Phoenix, AZ, USA. February 7, 2017.*