

Date: 2023-07-20

**CURRICULUM VITAE**  
**Keith Robert Lohse, PhD, PStat®**

**CONTACT INFORMATION**

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**PRESENT POSITION**

Associate Professor (Clinical); Program in Physical Therapy and Department of Neurology; Washington University School of Medicine; St. Louis, MO

**EDUCATION**

**Degrees and Post-Doctoral Training**

2007	<b>BS</b>	Psychology	Idaho State University, Pocatello, ID; USA
2009	<b>MA</b>	Cognitive Psychology	University of Colorado, Boulder, CO; USA
2012	<b>PhD</b>	Psychology, Neuroscience, and Cognitive Science	University of Colorado, Boulder, CO; USA
2014	<b>Postdoctoral Training</b>	Rehabilitation Science	University of British Columbia, Vancouver, BC; CAN

**Professional Licenses and Certifications**

2019 **PStat**®, Accredited Professional Statistician, *American Statistical Association*.

**ACADEMIC POSITIONS/EMPLOYMENT**

2007 – 2012	<b>Teaching assistant</b> for the Department of Psychology and Neuroscience; College of Arts and Sciences. University of Colorado, Boulder, CO; USA
2011	<b>Instructor</b> for the Department of Psychology and Neuroscience; College of Arts and Sciences. University of Colorado, Boulder, CO; USA
2012 – 2014	<b>Postdoctoral Research Associate</b> ; Motor Skills Laboratory; School of Kinesiology. University of British Columbia, Vancouver, BC; CAN
2014 – 2017	<b>Assistant professor</b> ; School of Kinesiology; College of Education. Auburn University, Auburn, AL; USA
2017 – 2021	<b>Assistant professor</b> ; Department of Health and Kinesiology; College of Health. University of Utah, Salt Lake City, UT; USA
2017 – 2021	<b>Adjunct assistant professor</b> ; Department of Physical Therapy and Athletic Training; College of Health. University of Utah, Salt Lake City, UT; USA
2017 – 2021	<b>Adjunct assistant professor</b> ; Department of Psychology; College of Social and Behavioral Science. University of Utah, Salt Lake City, UT; USA
2021 – present	<b>Associate professor</b> ; Physical Therapy and Neurology; Washington University School of Medicine, Saint Louis, MO; USA

**HONORS AND AWARDS**

2011	Co-recipient of the Dozier Award for academic excellence among doctoral students from the Department of Psychology and Neuroscience at the University of Colorado, Boulder.
2017	Recipient of the Early Career Distinguished Scholar Award from the <i>North American Society for the Psychology of Sport and Physical Activity</i> (NASPSPA).
2019	Elected to Board of Directors for the <i>American Society for Neurorehabilitation</i> .

## TEACHING TITLES AND RESPONSIBILITIES

Year	Term	Course	Role	Description
2007-2012	Fall/Spring	PSYC 3101	Teaching Assistant	Introduction to Statistics Lab
2011	Summer	PSYC 2145	Instructor	Cognitive Psychology
2014	Spring	KIN 371	Instructor	Statistics for Kinesiology
2014	Fall	KINE 3650	Instructor	Motor Learning and Performance
2015	Spring	KINE 7730	Instructor	Neuromotor Control
2015	Spring	KINE 3650	Instructor	Motor Learning and Performance
2015	Summer	KINE 7650	Instructor	Advanced Motor Learning
2015	Fall	KINE 3650	Instructor	Motor Learning and Performance
2016	Spring	KINE 7730	Instructor	Neuromotor Control
2016	Spring	KINE 3650	Instructor	Motor Learning and Performance
2016	Summer	KINE 7650	Instructor	Advanced Motor Learning
2016	Fall	KINE 8970	Instructor	Biostatistics I
2017	Spring	KINE 8970	Instructor	Biostatistics II
2017	Summer	KINE 7650	Instructor	Advanced Motor Learning
2018	Spring	KINES 3551	Instructor	Application of Human Motor Development
2018	Fall	KINES 3550	Instructor	Motor Behavior
2019	Spring	KINES 7103	Instructor	Design and Analysis I
2019	Fall	KINES 6770	Instructor	Instrumentation and Measurement in Movement Science
2020	Spring	KINES 7103	Instructor	Design and Analysis I
2020	Fall	KINES 6885	Instructor	Advanced Motor Learning
2021	Spring	KINES 7103	Instructor	Design and Analysis I
2021	Summer	DPT	Designer, Lecturer	Developed synchronous and asynchronous lectures, and assessments for the Evidence thread of the DPT curriculum
2021	Fall	DPT	Designer, Lecturer	Developed synchronous and asynchronous lectures and assessments for the Evidence thread of the DPT curriculum
2021	Fall	MSP PhD	Lecturer	Provided lectures on data management and data visualization to movement science program students, post-docs, and faculty
2022	Spring	DPT	Designer, Lecturer	Developed synchronous and asynchronous lectures and assessments for the Evidence thread of the DPT curriculum
2022	Spring	MSP PhD	Lecturer	Provided lectures and facilitated discussion of career pathways
2022	Fall	DPT	Designer, Lecturer	Developed and led synchronous and asynchronous lectures and assessments for the Evidence thread of the DPT curriculum (1 <sup>st</sup> and 2 <sup>nd</sup> years).
2022	Fall	DPT	Designer	Researching and outlining a series of asynchronous modules entitled "Measurement in Society" focused on understanding socially constructed variables (e.g., race, gender) in biomedicine.
2022	Fall	MSP PhD	Designer	Working with Dr. Jacob McPherson, creating a syllabus for the "Instrumentation" course for our MSP PhD students.
2023	Spring	DPT	Designer, Lecturer	Developed and led synchronous and asynchronous lectures and assessments for the Evidence thread of the DPT curriculum (1 <sup>st</sup> and 2 <sup>nd</sup> years). Also contributed to DEA III in the legacy curriculum for 3 <sup>rd</sup> year students.
2023	Spring	MSP PhD	Designer	Having completed a rough syllabus for the Instrumentation course, we started developing weekly assignments and lectures.
2023	Spring	DPT	Designer	Created, received feedback, and revised a series of asynchronous modules entitled "Measurement in Society" focused on understanding socially constructed variables (e.g., race, gender) in biomedicine.

## UNIVERSITY, SCHOOL OF MEDICINE, AND HOSPITAL APPOINTMENTS AND COMMITTEES

### Departmental Service

2015	Search <b>committee member</b> , motor development search. School of Kinesiology; Auburn University.
2017	<b>Member</b> , graduate curriculum committee (evaluating research-core classes). HKR; University of Utah.
2017	Search <b>committee chair</b> , applied biomechanics search. HKR; University of Utah.
2017 – 2018	Search <b>committee chair</b> , motor behavior/cognitive neuroscience search. HKR; University of Utah.
2017 – 2020	<b>Theme leader</b> , Cognitive and Motor Neuroscience (CMN) research theme. HKR; University of Utah.
2018 – 2019	Search <b>committee chair</b> , motor behavior/cognitive neuroscience search. HKR; University of Utah.
2020 – 2021	<b>Member</b> , Chair's Advisory Council, representative for pre-tenured faculty. HKR; University of Utah.
2022 – 2023	Search <b>committee member</b> , exercise science/physiology faculty search, PT program, WUSOM.

### University Service

2018	<b>Reviewer</b> , Center for Clinical and Translational Science Pilot Grant program. College of Health; University of Utah.
2018	<b>Member</b> , research space taskforce. Focused on collaborative use of research and teaching spaces. Representative for the Cognitive and Motor Neuroscience research theme. College of Health; University of Utah.

## EDITORIAL RESPONSIBILITIES

### Editorial Boards

2015 – 2023	Editorial board member, <i>Journal of Motor Learning and Development</i> .
2018 – 2019	Guest editor for a special issue of the <i>Journal of Motor Learning and Development</i> entitled, "Methodological Advances in Motor Learning and Development".
2018 – 2021	Associate Editor (measurement and evaluation), <i>Research Quarterly for Exercise and Sport</i> .
2021 – present	Editorial board member (statistical consultant), <i>Research Quarterly for Exercise and Sport</i> .
2022 – present	Editorial board member (statistical consultant), <i>Journal of Neurologic Physical Therapy</i> .
2023 – present	Associate Editor (data management, reporting, and transparency), <i>Journal of Motor Learning and Development</i>

### Ad-Hoc Reviewer

Below is a list of journals for whom I have provided reviews:

- *American Journal of Preventive Medicine*;
- *Applied Cognitive Psychology*;
- *Applied Physiology, Nutrition and Metabolism*;
- *Archives of Physical Medicine and Rehabilitation*;
- *Brain*;
- *Brain Communications*;
- *Developmental Neurorehabilitation*;
- *Disability and Rehabilitation*;
- *Games for Health Journal*;
- *Gerontology*;
- *Human Movement Science*.
- *International Journal of Sports Science and Coaching*;
- *Journal of Biomechanics*;
- *Journal of Experimental Psychology: General*;
- *Journal of Experimental Psychology: Human Perception and Performance*;
- *Journal of Mathematical Psychology*;
- *Journal of Motor Learning and Development*;
- *Journal of Neuroengineering and Rehabilitation*;
- *Journal of Neurologic Physical Therapy*.
- *Journal of Neurology, Neurosurgery & Psychiatry*
- *Journal of Psychophysiology*;
- *Journal of Rehabilitation Research & Development*;
- *Journal of Sport & Exercise Psychology*;

- *Journal of Sport Science*;
- *Motor Control*;
- *Measurement in Physical Education & Exercise Science*;
- *Medicine & Science in Sports & Exercise*;
- *Neurorehabilitation & Neural Repair*;
- *NeuroImage*;
- *NeuroImage Clinical*;
- *Physical Therapy*;
- *PLOS ONE*;
- *Psychological Bulletin*;
- *Psychology of Sport and Exercise*;
- *Psychonomic Bulletin & Review*;
- *Scandinavian Journal of Medicine & Science in Sports*;
- *Stroke*;
- *Transactions on Neural Systems & Rehabilitation Engineering*

I also serve as a “recommender” for a Peer Community In (PCI) Health and Movement Sciences. The PCI provides publicly available reviews of pre-prints (<https://healthmovsci.peercommunityin.org/>).

### NATIONAL PANELS, COMMITTEES, AND BOARDS

2018	<b>Member</b> , programming committee for the motor control and learning section of NASPSPA
2019	<b>Member</b> , NASPSPA student research/travel awards committee
2019 – present	<b>Member</b> , Board of Directors for ASNR
2019	<b>Member</b> , programming committee for the motor control and learning section of NASPSPA
2019	<b>Reviewer</b> , Canadian Partnership for Stroke Recovery “Catalyst Grants” program
2019 – 2021	<b>Member</b> , ASNR Education Committee
2020	<b>Member</b> , NASPSPA student research/travel awards committee
2021 – 2022	<b>Member</b> , NASPSPA motor learning, development, and control research seminar series committee
2022 – present	<b>Chair</b> , ASNR Education committee
2022	<b>Reviewer</b> , Perception Action & Cognition Program, National Science Foundation (NSF).
2022	<b>Abstract Reviewer</b> for the American Heart Association’s 2022 International Stroke Conference.

### COMMUNITY SERVICE CONTRIBUTIONS

#### Current Professional Societies and Organizations

2009 – present	<b>Member</b> of the North American Society for the Psychology of Sport and Physical Activity (NASPSPA)
2014 – present	<b>Member</b> of the American Society for Neurorehabilitation (ASNR)
2018 – present	<b>Member</b> of the Society for Transparency, Openness, and Replication in Kinesiology (STORK)
2019 – present	<b>Member</b> of the American Statistical Association (ASA)

#### Other Prior/Intermittent Professional Memberships

- Association for Psychological Science; American Congress for Rehabilitation Medicine; American Physical Therapy Association

#### Workshops and Other Projects

2012 – 2016	I used to write a blog called “Compared to What?” where I worked through topics in statistics and research methods. This blog was designed to be pedagogical, providing step-by-step instructions and code working through issues that I encountered (either directly or indirectly) through my research: <a href="http://compare2what.blogspot.com/">http://compare2what.blogspot.com/</a> ...With the benefit of greater expertise and perspective, I would not recommend the blog, but I do think it was useful for improving my writing.
2016	I wrote and thoroughly commented R Code to accompany Jeff Long’s 2012 book, <i>Longitudinal Data Analysis for the Behavioral Sciences</i> . Code for all chapters is openly available from: <a href="https://github.com/keithlohse/LMER_Clinical_Science/tree/master/scripts">https://github.com/keithlohse/LMER_Clinical_Science/tree/master/scripts</a>
2017 – present	Working with Allan Kozlowksi, PhD (Michigan State University; Mary Free Bed Hospital), I helped to develop a two-part instructional workshop on longitudinal data analysis for the <i>American Congress of Rehabilitation Medicine</i> . The inaugural session was taught at Progress in Rehabilitation

- Research, 2017, in Atlanta, GA. [https://github.com/keithlohse/LMER\\_Clinical\\_Science/](https://github.com/keithlohse/LMER_Clinical_Science/)
- 2019 Working with Zack Zenko, PhD, Chris Hill, PhD, and John Mills, PhD, I organized a workshop on open-science research practices at the annual meeting of the *North American Society for the Psychology of Sport and Physical Activity* in conjunction with the Society for Transparency, Openness, and Replication in Kinesiology.
- 2019 With Lei-Sook Liew, PhD, and James Finley, PhD, I helped to organize a pre-conference workshop entitled, "Reliability and Reproducibility in Neurorehabilitation Research". My section of the presentation focused on "Data visualization: From quality assurance to final publication".
- 2020 I conducted a workshop on mixed-effect regression for experimental sciences at Auburn University in February 2020. This content focused on adapting mixed-effects regression models to many common study designs. I hope to continue working on these materials to develop a book/course on the topic: [https://keithlohse.github.io/mixed\\_effects\\_models/](https://keithlohse.github.io/mixed_effects_models/)
- 2021 I conducted a workshop on mixed-effect regression for Centre for Motor Control, which is headquarter at the University of Toronto but the workshop was attended by ~60 researchers and trainees across the USA and Canada. I updated previous materials on this topic here: [https://keithlohse.github.io/mixed\\_effects\\_models/](https://keithlohse.github.io/mixed_effects_models/)

## INVITED PROFESSORSHIPS AND LECTURESHIPS

### *Invited Talks*

1. April 2013: "Applied motor learning: Recent developments in motor learning and skill acquisition." National Strength and Conditioning Association Provincial Clinic, Richmond, BC.
2. May 2015: "Longitudinal data analysis for the clinical sciences." This was a workshop on mixed-effect linear models that I developed and led at the Washington University of St. Louis School of Medicine, St. Louis, MO.
3. May 2015: "Predicting change during outpatient stroke rehabilitation: A retrospective regression analysis." Presentation at the Washington University School of Medicine, St. Louis, MO.
4. April 2017: "Streamlining clinical science with structured data archives: Data-driven insights from the stroke rehabilitation literature." Invited presentation as part of the School of Biological and Health Systems Engineering seminar series at Arizona State University, Tempe, AZ.
5. November 2017: "Cognitive and affective determinants of motor skill learning: An applied neuroscientific model." Invited keynote presentation at the Second Scientific Conference on Motor Skill Acquisition, Kisakallio Sports Institute, Jyväskylä, Finland.
6. June 2018: "Exploring measurement and methodology in motor behavior." Invited talk for the early career award I received from the *North American Society for the Psychology of Sport and Physical Activity*.
7. November 2018: "Expanding your toolkit: How can you use data science to streamline your research and tackle bigger questions?" Invited participant for a roundtable discussion on data science in neurorehabilitation at the *American Society for Neurorehabilitation* annual meeting. San Diego, CA.
8. May 2020: "Meta-Analysis for Complex Interventions." Presented as part of the webinar "Research in the Time of COVID" hosted by the *American Society for Neurorehabilitation*.
9. November 2020, with Drs. Ste-Marie, Carter, and Miller: "The Logic and Process and Power Analysis: Assumptions, Guesses, and Estimates." Presented as part of a webinar for the *North American Society for the Psychology of Sport and Physical Activity*.
10. November 2022, with Dr. Kristin Sainani: "Statistical best practices in exercise science: From design to analysis". Invited symposium at the *Canadian Society for Exercise Physiology Conference*.
11. January 2023, invited to moderate the session "Predictive Modelling of Stroke Recovery Outcomes" with Dr. Myzoon Ali, Dr. Marcus Saikaley, and Dr. Anna Bonkhoff at the inaugural meeting of *Advances in Stroke Recovery*.

## RESEARCH SUPPORT

*\*denotes and internal grant/award.*

### **Pending Grants and Research Support**

<i>1R61NS135595-01</i>	<i>Lohse (PI)</i>	<i>2022</i>
NIH/NINDS R61/33		
<b>Title:</b> Improving information architecture in neurology: Making stroke trial data FAIR.		
<b>Amount:</b> 1,164,261 USD		
<b>Role:</b> Principal Investigator		
<i>Under Review</i>	<i>Schaefer (PI)</i>	<i>2022</i>
NIH R03 (sub-award to WUSTL)		
<b>Title:</b> Visuospatial training for boosting functional upper-extremity motor training in older adults.		
<b>Amount:</b> ##### USD (##### USD to WUSTL)		
<b>Role:</b> Co-Investigator (0.3 calendar months per year)		
<i>R21 AT012088-01</i>	<i>Schaefer (PI)</i>	<i>2022</i>
NIH/NICCIH R21 (sub-award to WUSTL)		
<b>Title:</b> Measuring expectancy effects of transcranial direct current stimulation on motor learning.		
<b>Amount:</b> 200,000 USD (19,268 USD to WUSTL)		
<b>Role:</b> Co-Investigator (0.6 calendar months per year)		
<i>Under Revision</i>	<i>Peterson (PI)</i>	<i>2022</i>
VA Merit Award (sub-award to WUSTL)		
<b>Title:</b> Using cognition to predict individual differences in motor learning for older adults with Parkinson's disease.		
<b>Amount:</b> 1,194,387 USD (100,000 USD to WUSTL)		
<b>Role:</b> Collaborator (2 calendar months per year)		
<i>Under Review</i>	<i>Zellers (PI)</i>	<i>2022</i>
NIH/NIAMSD R21		
<b>Title:</b> Applying photoacoustic imaging to quantify human tendon vasculature.		
<b>Amount:</b> 274,999 USD		
<b>Role:</b> Collaborator (2.4 calendar months in year 1, 1.2 in year 2)		

**Active Grants and Research Support (Oldest to Newest)**

<b>1. NCCIH R34 AT011015</b>	<i>Earhart &amp; Rawson (PIs)</i>	2021-2024
NIH/NCCIH		
<b>Title:</b> Moving Mindfully: A MBSR-Centered Approach to Freezing in Parkinson Disease.		
<b>Amount:</b> 708,750 USD		
<b>Role:</b> Co-Investigator (1.2 calendar months/year)		
<b>2. ICTS/WUSTL</b>	<i>McPherson (PI)</i>	2022-2023
†KL2 Career Development Award		
<b>Title:</b> Neural mechanisms of motor heterogeneity in multiple sclerosis		
<b>Amount:</b> 246,976 USD		
<b>Role:</b> Supplemental Mentor (0 calendar months)		
<b>3. R01MH123723-01A1</b>	<i>Lang, Limperopoulos, Marrus (Co-PIs)</i>	2021-2026
NIH/NIMH R01		
<b>Title:</b> Variation in early motor function in autism, cerebellar injury, and normal twins.		
<b>Amount:</b> 857,745 USD		
<b>Role:</b> Collaborator (1.2 calendar months/year)		
<b>4. R25HD105583-01A1</b>	<i>Liew &amp; Kennedy (Co-PIs)</i>	2022-2027
NIH/NICHD-NCMRR R25		
<b>Title:</b> Building a data science workforce to improve the reproducibility of rehabilitation research.		
<b>Amount:</b> 811,744 USD		
<b>Role:</b> Other (Educational Leadership Team Member)		
<b>5. 2 R37 HD068290-10</b>	<i>Lang (PI)</i>	2022-2027
NIH/NICHD R37		
<b>Title:</b> Translation of In-Clinic Gains to Gains in Daily Life.		
<b>Amount:</b> 2,125,229 USD		
<b>Role:</b> Co-Investigator (1.8 calendar months per year)		
<b>6. R01 AR081881</b>	<i>Harris (PI)</i>	2023-2028
NIH/NIAMS R01		
<b>Title:</b> Longitudinal biomechanics and patient-reported outcomes after periacetabular osteotomy for developmental dysplasia of the hip.		
<b>Amount:</b> 2,250,000 USD		
<b>Role:</b> Co-Investigator (1.2 calendar months per year over 5 years)		
<b>7. 1UF1NS125512-01</b>	<i>Lee, JM (PI)</i>	2023-2024
NIH/NIA U01		
<b>Title:</b> Washington University/University of Texas Southwestern VCID Consortium Site.		
<b>Amount:</b> 2,535,125 USD		
<b>Role:</b> Collaborator (1.2 calendar months per year)		
<b>8. 1RF1AG079503-01</b>	<i>Goyal, Bauer, Song, &amp; Lee, JM (Co-PIs)</i>	2022-2025
NIH/NIA R01		
<b>Title:</b> Imaging and Reversibility of Cellular and Network Metabolic Dysfunction in Alzheimer's Disease.		
<b>Amount:</b> 2,244,795 USD		
<b>Role:</b> Collaborator (1.2 calendar months per year)		

**Previous/Completed Grants and Research Support (Oldest to Newest)**

<b>1. FAA 16-C-TTHP-AU</b>	<i>Sefton (PI)</i>	2016-2018
Federal Aviation Administration – Center for Excellence for Technical Training and Human Performance		
<b>Title:</b> Exploring the use of gamification for training.		
<b>Amount:</b> 238,000 USD		
<b>Role:</b> Co-Investigator (0 calendar months).		
<b>2. IGP Project # 170138</b>	<i>Lohse (Co-PI)</i>	2017-2018
†Auburn University Internal Grants Program		
<b>Title:</b> Improving the acquisition of manual-wheelchair skills: An EEG study using motor learning principles.		
<b>Amount:</b> 20,000 USD		
<b>Role:</b> Co-Principle Investigator (with Matt Miller; 0 calendar months).		
<b>3. CoH Seed Grant</b>	<i>Fino (PI)</i>	2019
†University of Utah; College of Health Pilot Grant Program		
<b>Title:</b> Neural activity of balance recovery following concussion.		
<b>Amount:</b> 17,500 USD		
<b>Role:</b> Co-Investigator (0 calendar months/year)		
<b>4. R01-NCE</b>	<i>Van Dillen (PI)</i>	2019
NIH/NICHD/NCMRR 5 R01 HD047709		
<b>Title:</b> Spinal control during functional activities to improve low back pain outcomes.		
<b>Role:</b> Consultant		
<b>5. University of Utah</b>	<i>Lohse &amp; Weatherwax (Co-PI)</i>	2020-2021
†University of Utah Graduate Teaching Assistantship		
<b>Title:</b> The Development and Implementation of an Online Laboratory for an Undergraduate Hybrid Biomechanics Course.		
<b>Role:</b> Co-Mentor (0 calendar months/year)		
<b>6. CIHR PTJ 153330</b>	<i>Boyd (PI)</i>	2017-2022
Canadian Institutes of Health Research/Instituts de recherche en santé du Canada		
<b>Title:</b> Characterizing Arm Recovery in People with Severe Stroke (CARPSS).		
<b>Amount:</b> 665,000 CAD		
<b>Role:</b> Co-Investigator (0 calendar months/year)		
<b>7. HSF/CPSR</b>	<i>Eng (PI)</i>	09/2021-2/2022
Heart and Stroke Foundation/Canadian Partnership for Stroke Recovery Operating Grant		
<b>Title:</b> Determining Optimal post-Stroke Exercise (DOSE).		
<b>Role:</b> Consultant		
<b>8. #UL1TR002345</b>	<i>Lohse (PI)</i>	2022
†WUSTL ICTS “Just in Time” Grant		
<b>Title:</b> Improving information architecture in neurology: Creating an open-access database of harmonized stroke trials.		
<b>Amount:</b> 4,950 USD		
<b>Role:</b> Principal Investigator (0 calendar months per year)		
<b>9. #202207003</b>	<i>Lang (PI)</i>	2023
†WUSTL ICTS “Just in Time” Grant		
<b>Title:</b> Integrating wearable sensor data in to the rehabilitation clinical environment.		
<b>Amount:</b> 5,000 USD		
<b>Role:</b> Co-Investigator (0 calendar months per year)		



**Grant and Research Support Not Funded (Oldest to Newest)**

<b>1. Not Funded</b>	<i>Lohse (PI)</i>	2014
NIH / NINDS R03		
<b>Title:</b> Centralized open-access research (COAR): A database for stroke rehabilitation.		
<b>Role:</b> Principal Investigator		
<b>2. Not Funded</b>	<i>Lohse (PI)</i>	2015
NIH / NINDS R03		
<b>Title:</b> Centralized open-access research (COAR): A database for stroke rehabilitation.		
<b>Role:</b> Principal Investigator		
<b>3. Not Funded</b>	<i>Lohse (PI)</i>	2018
†Center on Aging, University of Utah, pilot grant program		
<b>Title:</b> Cortical Noise as a Biomarker for Age-Related Declines in Cognitive and Motor Function.		
<b>Role:</b> Principal Investigator with Kevin Duff (0 calendar months).		
<b>4. Not Funded</b>	<i>Dorval (Co-PI)</i>	2018
NIH / NINDS R01		
<b>Title:</b> The Parkinsonian Relationship between Beta-Activity and Movement Kinetics.		
<b>Role:</b> Co-Principal Investigator (2 calendar months/year for 5 years).		
<b>5. Not funded</b>	<i>Lohse (PI)</i>	2018
NIH KL2		
<b>Title:</b> Getting More Out of Data: Personalized Medicine through Advanced Statistical Modelling in Rehabilitation.		
<b>Role:</b> Principal Investigator (6.72 calendar months/year for 2 years).		
Mentors: Jacob Kean and Tom Greene.		
<b>6. Not Funded</b>	<i>Lohse (PI)</i>	2018
National Science Foundation: Science of Learning Initiative		
<b>Title:</b> Measuring and Modeling Age-Related Changes in Reinforcement Learning.		
<b>Role:</b> Principal Investigator (2 calendar months/year for 3 years).		
(Sub-awards to Matt Miller and Matt Jones as co-investigators).		
<b>7. Not Funded</b>	<i>Lohse (PI)</i>	2018
†University of Utah; College of Health Pilot Grant Program		
<b>Title:</b> Sensorimotor integration and cognitive compensation in walking and turning for older adults.		
<b>Role:</b> Principle Investigator (0 calendar months/year)		
<b>8. Not Funded</b>	<i>Williams (PI)</i>	2019
The PAC-12 Student-Athlete Health and Well-Being Grant Program		
<b>Title:</b> Modeling injury and mental health risk in a sample of collegiate athletes.		
<b>Amount:</b> 675,000 USD		
<b>Role:</b> Co-Investigator (1 calendar month/year for 2 years)		
<b>9. Not Funded</b>	<i>Williams (PI)</i>	2018
NIH / NCI R01		
<b>Title:</b> Developing effective training programs for enhancing perceptual-cognitive expertise in radiographic imaging.		
<b>Role:</b> Co-Investigator (1.2 calendar months/year for 5 years)		
<b>10. Not Funded</b>	<i>Williams (PI)</i>	2018
NIH/ NIA R01		
<b>Title:</b> Multi-sensory processing for real-world spatial navigation in older adults: the influence of mobility-related anxiety.		
<b>Role:</b> Co-Investigator (1.2 calendar months/year for 5 years)		
<b>11. Not Funded</b>	<i>Euler, Lohse, &amp; Davis (Co-PIs)</i>	2018
†University of Utah Neuroscience Initiative Pilot Seed Grant		
<b>Title:</b> EEG Biomarkers of Mental Exertion: Validation and Implications for Personalized Medicine.		
<b>Role:</b> Co-Principle Investigator (0 calendar months/year)		

<b>12. Not Funded</b>	<i>Lohse (PI)</i>	2019
†University of Utah, Center on Aging Pilot Grants Program		
<b>Title:</b> Cortical Noise as a Biomarker for Age-Related Declines in Cognitive and Motor Function.		
<b>Amount:</b> 15,914 USD		
<b>Role:</b> Principle Investigator (0 calendar months/year)		
<b>13. Not Funded</b>	<i>Lohse (PI)</i>	2019
†University of Utah, Center on Aging Innovations Grants Program		
<b>Title:</b> The role of mobility-related anxiety in anticipatory and reactive balance control in older adults.		
<b>Amount:</b> 39,951 USD		
<b>Role:</b> Principle Investigator (0 calendar months/year)		
<b>14. Not Funded</b>	<i>Williams (PI)</i>	2019
The PAC-12 Student-Athlete Health and Well-Being Grant Program		
<b>Title:</b> Modeling injury and mental health risk in a sample of collegiate athletes.		
<b>Amount:</b> 300,000 USD		
<b>Role:</b> Co-Investigator (1 calendar month/year for 2 years)		
<b>15. Not Funded</b>	<i>Podlog (PI)</i>	2019
AHRQ R03		
<b>Title:</b> Enhancing Adherence to Physical Therapy for Chronic Low Back Pain: The Role of Tripartite Efficacy Beliefs.		
<b>Amount:</b> 99,486 USD		
<b>Role:</b> Co-Investigator (0.15 calendar months/year)		
<b>16. Not Funded</b>	<i>Lohse (PI)</i>	2019
NIH/NIA R21 PAR-19-053		
<b>Title:</b> The neural and cognitive consequences of anxiety in shaping fall risk for older adults.		
<b>Amount:</b> 275,000 USD		
<b>Role:</b> Principal Investigator (2.4 calendar months/year for 2 years)		
<b>17. Not Funded</b>	<i>Boyd (PI)</i>	2019
Canadian Institutes of Health Research/Instituts de recherche en santé du Canada		
<b>Title:</b> Individualized pathways to recovery after stroke.		
<b>Amount:</b> 940,000 CAD		
<b>Role:</b> Co-Investigator (0.5 calendar months/year)		
<b>18. Not Funded</b>	<i>Lohse (PI)</i>	2019
†University of Utah, Center for Clinical and Translational Science Pilot Program		
<b>Title:</b> Neural, affective, and cognitive features of fall risk for older adults.		
<b>Amount:</b> 30,000 USD		
<b>Role:</b> Principal Investigator (0 calendar month/year for 1 year)		
<b>19. Not Funded</b>	<i>French (PI)</i>	2020
†Utah CCTS S.T.A.R.S. TL1 Program		
<b>Title:</b> Leveraging the electronic medical record to understand the relationship between functional mobility recovery and health service outcomes after stroke.		
<b>Role:</b> Mentor (0 calendar months/year)		
<b>20. Not Funded</b>	<i>Rimer (PI)</i>	2020
The PAC-12 Student-Athlete Health and Well-Being Grant Program		
<b>Title:</b> An Applied Epidemiological Approach to Reducing the Incidence of Injury in Collegiate Athletics.		
<b>Amount:</b> 150,000 USD		
<b>Role:</b> Co-Investigator (1 calendar month/year for 2 years)		

<b>21. Not Funded</b>	<i>Lohse/Williams (Co-PI)</i>	2020-2022
Armament Research, Development and Engineering Center (ARDEC)		
<b>Title:</b> The influence of stress on perception and decision-making in combat.		
<b>Amount:</b> 302,002 USD		
<b>Role:</b> Co-Principal Investigator (1 calendar month/year)		
***Although awarded, these funds were never released. This grant was competitively awarded through Thor Industries, a sub-contractor working with ARDEC. Funds were redirected following COVID19.***		
<b>22. Not Funded</b>	<i>Fritz (PI)</i>	2020
NIH/NCCIH U01 (Clinical Trial Required)		
<b>Title:</b> SMT Therapeutic Alliance.		
<b>Amount:</b> 3,812,500.00 USD		
<b>Role:</b> Co-Investigator (1 calendar months/year)		
<b>23. Not Funded</b>	<i>Kittleson (PI)</i>	2020
AHRQ R21 (sub-award to University of Utah)		
<b>Title:</b> Development of personal prognostic profiles for dynamic and static balance.		
<b>Amount:</b> 250,000 USD (61,000.00 USD)		
<b>Role:</b> Co-Investigator (1 calendar months/year)		
<b>24. Not Funded</b>	<i>Williams (PI)</i>	2020
AHRQ R01		
<b>Title:</b> Testing evidence-based learning principles in radiology training.		
<b>Amount:</b> 1,906,250 USD		
<b>Role:</b> Co-Investigator (1 calendar months/year)		
<b>25. Not Funded</b>	<i>Hayes (PI)</i>	2020
†University of Utah CCTS Pilot Grant		
<b>Title:</b> Cycling intervention with biofeedback of power symmetry for patients with stroke in an inpatient rehabilitation facility: pilot randomized controlled trial.		
<b>Amount:</b> 20,000 USD		
<b>Role:</b> Co-Investigator (0 calendar months per year)		
<b>26. Not Funded</b>	<i>Schaefer &amp; Peterson (co-PIs)</i>	2020
NIH/NIA R01 (sub-award to University of Utah)		
<b>Title:</b> Using cognition to predict individual differences in motor learning for older adults with and without Parkinson disease.		
<b>Amount:</b> 298,649 USD (93,485 USD to Utah)		
<b>Role:</b> Co-Investigator (1.2 calendar months per year)		
<b>27. Not Funded</b>	<i>Liew (PI)</i>	2020
NIH/NICHD-NCMRR R25		
<b>Title:</b> Building a data science workforce to improve the reproducibility of rehabilitation research.		
<b>Amount:</b> 811,744 USD		
<b>Role:</b> Consultant		
<b>28. Not Funded</b>	<i>Harris (PI)</i>	2021
NIH/NIAMS R01		
<b>Title:</b> Multi-Domain Biomechanics after Periacetabular Osteotomy for Developmental Dysplasia of the Hip.		
<b>Amount:</b> ###,### USD		
<b>Role:</b> Co-Investigator (0 to 1.2 calendar months per year over 5 years)		
<b>29. Not Funded</b>	<i>McPherson (PI)</i>	2021
†KL2 at WUSTL		
<b>Title:</b> Characterizing excitatory, inhibitory, and neuromodulatory components of the voluntary motor command in people with multiple sclerosis.		
<b>Amount:</b> ###,### USD		
<b>Role:</b> Co-Investigator (0 calendar months)		

<b>30. Not Funded</b>	<i>McPherson (PI)</i>	2021
NIH/NCMRR R03		
<b>Title:</b> Characterizing excitatory, inhibitory, and neuromodulatory components of the voluntary motor command in people with multiple sclerosis.		
<b>Amount:</b> 100,000 USD		
<b>Role:</b> Co-Investigator (0.6 calendar months)		
<b>31. Not Funded</b>	<i>Kittleson (PI)</i>	2021
AHRQ R21 (sub-award to WUSTL)		
<b>Title:</b> Development of personal prognostic profiles for dynamic and static balance.		
<b>Amount:</b> 250,000 USD (61,000 USD to WUSTL)		
<b>Role:</b> Co-Investigator (1 calendar months/year)		
<b>32. Not Funded</b>	<i>Schaefer &amp; Peterson (co-PIs)</i>	2021
NIH/NIA R01 (sub-award to WUSTL)		
<b>Title:</b> Using cognition to predict individual differences in motor learning for older adults with and without Parkinson disease.		
<b>Amount:</b> 298,649 USD (93,485 USD to WUSTL)		
<b>Role:</b> Co-Investigator (1.2 calendar months per year)		
<b>33. Not Funded</b>	<i>Schaefer (PI)</i>	2021
NIH/NICCIH R21 (sub-award to WUSTL)		
<b>Title:</b> Measuring expectancy effects of transcranial direct current stimulation on motor learning.		
<b>Amount:</b> 200,000 USD (19,268 USD to WUSTL)		
<b>Role:</b> Co-Investigator (0.6 calendar months per year)		
<b>34. Not Funded</b>	<i>Zellers (PI)</i>	2022
NIH/NIAMSD K01		
<b>Title:</b> Human Achilles tendon structural biomarkers in diabetic and non-diabetic tendinopathy.		
<b>Amount:</b> 630,747 USD		
<b>Role:</b> Collaborator (0.0 calendar months per year)		
<b>35. Not Funded</b>	<i>McPherson (PI)</i>	2021
NIH/NCMRR K01		
<b>Title:</b> Characterizing excitatory, inhibitory, and neuromodulatory components of the voluntary motor command in people with multiple sclerosis.		
<b>Amount:</b> 475,000 USD		
<b>Role:</b> Co-Mentor (0.0 calendar months per year)		
<b>36. Not Funded</b>	<i>Peterson (PI)</i>	2022
VA Merit Award (sub-award to WUSTL)		
<b>Title:</b> Using cognition to predict individual differences in motor learning for older adults with Parkinson's disease.		
<b>Amount:</b> 1,194,387 USD (100,000 USD to WUSTL)		
<b>Role:</b> Collaborator (2 calendar months per year)		

## TRAINEE/MENTEE/SPONSORSHIP RECORD

### **Professional Mentees**

2022 – present	Laura McPherson, PhD	Provided supervision for multivariate statistics, unsupervised learning algorithms, and dimension reduction techniques. (KL2)
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### **Post-Doctoral Trainees**

2017 – 2020	Bradley Fawver, PhD	(now researcher at US Army Medical Research Directorate-West)
2018 – 2021	Tiphonie Raffegeau, PhD	(now faculty at George Mason University)
2022 – present	Allison Miller, PhD DPT	(currently at WUSTL)

### **Doctoral Trainees**

2014 – 2017	Amber Leiker	(now faculty at LaGrange College)
2016 – 2021	Anupriya Pathania	(graduated 2021)
2018 – 2023	Mindie Clark	(now faculty at Rocky Mountain College)

### **Masters Trainees**

2019 – 2021	Jason Dude	(now bioinformaticist at Washington University in Saint Louis)
2020 – 2022	Sarah Taylor	(now skills team coach at Park City Ski & Snowboard)

### **Undergraduate Trainees**

(Below I call attention to only those trainees who have won awards or specific recognition.)

2019	Cammy Stukel	Undergraduate Research Opportunities Program Grant recipient (1200 USD; summer semester).
2019	Sarah Taylor	Undergraduate Research Opportunities Program Grant recipient (1200 USD; summer semester).
2019	Sarah Taylor	HKR Distinguished Undergraduate Student Award winner.
2019	Cammy Stukel	Undergraduate Research Opportunities Program Grant recipient (1200 USD; fall semester).
2020	Ashlee McBride	Undergraduate Research Opportunities Program Grant recipient (1200 USD; spring semester).
2020	Sarah Taylor	Undergraduate Research Opportunities Program Grant recipient (1200 USD; spring semester).
2020	Ellen Williams	Undergraduate Research Opportunities Program Grant recipient (1200 USD; spring semester).
2020	Ellen Williams	HKR Distinguished Undergraduate Student Award winner.

**Doctoral Student Committees**

<b>Student</b>	<b>Advisor</b>	<b>University</b>	<b>Quals/Comps</b>	<b>Proposal</b>	<b>Defense</b>
<i>Adam Jagodinsky</i>	Weimar	Auburn	2014	2015	2016
<i>Taylor Holt</i>	Oliver	Auburn	2014	2015	2015
<i>Lisa Henning</i>	Oliver	Auburn	2015	2016	2016
<i>Kirk Grand</i>	Miller	Auburn	2015	2016	2016
<i>Maurice Godwin</i>	Miller	Auburn	2015	2016	<i>na</i>
<i>Andrew Thompson</i>	Miller	Auburn	2015	2016	2016
<i>Adam Benz</i>	Porter	Edith Cowan	<i>na</i>	<i>na</i>	2016
<i>Leslie Niedert</i>	Kluess	Auburn	2015	2016	2017
<i>Jacqueline Irwin</i>	Pangelinan	Auburn	2016	2016	2017
<i>Christopher Wilburn</i>	Weimar	Auburn	2016	2017	2017
<i>Lorraine Smallwood</i>	Weimar	Auburn	2016	2017	2018
<i>Jeremy McAdam</i>	Sefton	Auburn	2016	2016	2018
<i>Justin Moody</i>	Pangelinan	Auburn	2016	<i>na</i>	<i>na</i>
<i>Marcos Daou</i>	Miller	Auburn	2016	2016	2018
<i>Brendan Ostlund</i>	Conradt	Utah	<i>na</i>	2018	2019
<i>Masahiro Yamada</i>	Raisbeck	UNCG	2019	2020	2020
<i>Joseph Thomas</i>	Williams	Utah	2019	2020	2021
<i>Rhiannon Cowan</i>	Williams	Utah	2019	2020	2021
<i>Melinda Schreiber</i>	Merryweather	Utah	<i>na</i>	2019	2021
<i>Peiyuan Wang</i>	Schaefer	ASU	2019	2020	2021
<i>Mariane Bacelar</i>	Miller	Auburn	2020	2021	2022
<i>Laura St. Germain</i>	Carter	McMaster	2019	2020	2023
<i>Brady DeCouto</i>	Williams	Utah	2020	2021	2022
<i>Angela. Weston</i>	Dibble	Utah	2020	2021	2023
<i>Danica Dummer</i>	Marcus	Utah	2020	2021	2022
<i>Sara Lotempio</i>	Strayer	Utah	<i>na</i>	2021	2022
<i>Juliana Parma</i>	Miller	Auburn	2021	2023	2023
<i>Jessica Barth</i>	Lang	WUSTL	<i>na</i>	2021	2022
<i>Jeffrey Konrad</i>	Lang	WUSTL	<i>na</i>	2021	--
<i>Cielita Lopez-Lennon</i>	Dibble	Utah	2022	--	--
<i>Lauren Tueth</i>	Earhart	WUSTL	<i>na</i>	2022	--
<i>Kayla Krueger</i>	Van Dillen	WUSTL	<i>na</i>	--	--

Note: "--" denotes a committee not yet transpired. "na" denotes a position I did not fill or not applicable.

## BIBLIOGRAPHY

\* indicates papers on which I was a senior author providing mentorship, guidance, and/or oversight.

### Manuscripts in Preparation

1. **Lohse, K.R.**, Kliethermes, S., & Fulk, G. (in preparation).  $P < 0.05$ ? Statistical guidance for authors and reviewers on p-values, confidence intervals, and Bayesian statistics. To be submitted to *Journal of Neurologic Physical Therapy*.
2. \*Clark, M., Euler, M.J., King, B.R., Williams, A.M., & **Lohse, K.R.** (in preparation). Associations between Age-Related differences in Occipital Alpha Power and the Aperiodic Parameters of the EEG Power Spectrum: A Cross-Sectional Cohort Study. To be submitted to the *International Journal of Psychophysiology*.

### Manuscripts Under Peer-Review

1. Hooyman, A., Haikalis, N.K., Wang, P., Schambra, H.M., **Lohse, K.R.**, & Schaefer, S.Y. (under review). Evidence and sources of placebo effects in transcranial direct current stimulation during visuospatial working memory training. *Scientific Reports*.
2. **Lohse, K.R.**, Kozlowski, A., & Strube, M. (under revision). Model specification in mixed-effects models: A focus on random effects. *Communications in Kinesiology*.
3. \*McNish, R., **Lohse, K.R.**, Pruthi, S., Hastings, M.K., Zheng, J., & Zellers, J.A. (under review). Sources of variability with Achilles tendon assessment on quantitative MRI and relationships to patient characteristics. *Radiology*.
4. \*Konrad, J.D., Marrus, N., **Lohse, K.R.**, Thuet, K.M., & Lang, C.E. (under review). Associations between motor coordination and wearable sensor variables vary by recording context but not assessment type. *Journal of Motor Behavior*.
5. Euler, M.J., Vehar, J.V., Guevara, J.E., Geiger, A., & **Lohse, K.R.** (under review). Associations between the resting EEG aperiodic slope and broad domains of cognitive ability. *Psychophysiology*.
6. Aldridge, C.M., Braun, R., **Lohse, K.R.**, de Havenon, A., Cole, J., Cramer, S.C., Lindgren, A.G., Keene, K.L., Hsu, F.-C., & Worrall, B.B. (under review). Genome-wide Association Studies of Three Distinct Recovery Phenotypes in Mild Stroke. *Neurology*.

### Peer-Reviewed Articles

1. **Lohse, K.R.**, Sherwood, D.E., & Healy, A.F. (2010). How changing the focus of attention affects performance, kinematics, and electromyography in dart throwing. *Human Movement Science*, 29, 542-555. doi:10.1016/j.humov.2010.05.001.
2. **Lohse, K.R.**, Healy, A.F., & Sherwood, D.E. (2010). Mental practice in the intermanual transfer of motor skills. *Journal of Imagery Research in Sport and Physical Activity*, 5, A1. doi: 10.2202/1932-0191.1052.
3. **Lohse, K.R.**, Sherwood, D.E., & Healy, A.F. (2011). Neuromuscular effects of shifting the focus of attention in a simple force production task. *Journal of Motor Behavior*, 43, 174-184. doi: 10.1080/00222895.2011.555436.
4. **Lohse, K.R.** & Sherwood, D.E. (2011). Defining the focus of attention: Effects of attention on perceived exertion and fatigue. *Frontiers in Psychology*, 2, 332. doi: 10.3389/fpsyg.2011.00332.
5. **Lohse, K.R.** (2012). The influence of attention on learning and performance: Pre-movement time and accuracy in an isometric force production task. *Human Movement Science*, 31, 12-25. doi:10.1016/j.humov.2011.06.001.
6. **Lohse, K.R.**, & Healy, A. F. (2012). Exploring the contributions of procedural and declarative training to performance: A test of the procedural reinstatement principle. *Journal of Applied Research in Memory and Cognition*. 1, 65-72. doi:10.1016/j.jarmac.2012.02.002
7. **Lohse, K.R.**, & Sherwood, D.E. (2012). Thinking about muscles: The neuromuscular effects of internally focused attention in accuracy and fatigue. *Acta Psychologica*, 140, 236-245. doi:10.1016/j.actpsy.2012.05.009
8. Carpenter, S.K., **Lohse, K.R.**, Healy, A.F., Bourne, L.E., & Clegg, B. (2013). External focus of attention improves retention and transfer in a speeded aiming task. *Journal of Applied Research in Memory and Cognition*, 2, 14-19. doi:10.1016/j.jarmac.2012.11.002
9. **Lohse, K.R.**, Shirzad, N., Verster, A., Hodges, N.J., & Van der Loos, H.F.M. (2013). Video games and rehabilitation: Using design principles to enhance patient engagement. *Journal of Neurologic Physical Therapy*, 37, 166-175.
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*Experimental Psychology: General*, 143, 930-948. doi: 10.1037/a0032817

13. **Lohse, K.R.**, Wadden, K., Boyd, L.A. & Hodges, N.J. (2014). Motor skill acquisition across short and long time scales: A meta-analysis of neuroimaging data. *Neuropsychologia*, 59, 130-141.
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50. Caldwell, A. R., et al. (including **Lohse, K.R.**) (2020). Moving sport and exercise science forward: a call for the adoption of more transparent research practices. *Sports Medicine*, 50(3), 449-459.
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52. **Lohse, K.R.** (2020). Methodological advances in motor learning and development. *Journal of Motor Learning and Development*, 8, 1-13.
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54. Borg, D. **Lohse, K.R.**, & Sainani, K.L. (2020). Ten common statistical errors and their fixes. *Physical Medicine & Rehabilitation*. doi: 10.1002/pmrj.12395
55. **Lohse, K.R.**, Taylor, J.A., Butson, M., Knight, E.J., Sainani, K.S., & Vickers, A.J. (2020). Systematic Review of the use of "Magnitude-Based Inference" in Sports Science and Medicine. *PLoS ONE*. doi: 10.1371/journal.pone.0235318
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63. \***Lohse, K.R.**, Dummer, D., Hayes, H.A., Carson, R., & Marcus, R.L. (2021). Combining the AM-PAC "6-Clicks" and the Morse Fall Scale to predict individuals at risk for falls in an Inpatient Rehabilitation Hospital. *Archives of Physical Medicine and Rehabilitation*, 102(12), 2309-2315. doi: 10.1016/j.apmr.2021.07.800
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68. Hodges, N.J., & **Lohse, K.R.** (2022). An extended challenge-based framework for practice design in sports coaching. *Journal of Sport Sciences*, 754-768.
69. \*Bacelar, M.F.B., Parma, J.O., Cabral, D., Daou, M., **Lohse, K.R.**, & Miller, M.W. (2022). Dissociating the contributions of motivational and information processing factors to the self-controlled feedback learning benefit. *Psychology of Sport and Exercise*, 59, 102119.
70. Liew, S-L. et al. (including **Lohse, K.R.**) (2022). The ENIGMA Stroke Recovery Working Group: Big data neuroimaging to study brain-behavior relationships after stroke. *Human Brain Mapping*, 43(1), 129-148. doi: 10.1002/hbm.25015
71. St. Germain, L., **Lohse, K.R.**, Carter, M.J. (2022). Increased perceptions of autonomy through choice fail to enhance motor skill retention. *Journal of Experimental Psychology: Human Perception and Performance*, 48, 370-379.
72. \*Pathania, A., Euler, M.J., Clark, M., Cowan, R., Duff, K., & **Lohse, K.R.** (2022). Resting EEG spectral slopes are associated with age-related differences in information processing speed. *Biological Psychology*, 168, 108261.
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74. \*Krishnagopal, S. **Lohse, K.R.**, Braun, Robynne (2022). Stroke recovery phenotyping through network trajectory approach and graph neural networks. *Brain Informatics*, 9:13.
75. \*Hayward, K.S., Ferris, J.K., **Lohse, K.R.**, et al. (2022). An observational study of neuroimaging biomarkers of severe upper limb impairment after stroke. *Neurology*, doi: 10.1212/WNL.0000000000200517
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77. Lang, C.E., Holleran, C.L., Stube, M.J., Ellis, T.D., Newman, C.A., Fahey, M., DeAngelis, T., Nordhal, T.J., Reisman, D., Earhart, G.M., **Lohse, K.R.**, & Bland, M.D. (2022). Improvement in the capacity for activity vs. improvement in performance of activity in daily life during outpatient rehabilitation. *Journal of Neurologic Physical Therapy*. doi: 10.1097/NPT.0000000000000413
78. \*Taylor, S., Fawver, B., Thomas, J.L., Williams, A.M., & **Lohse, K.R.** (2022). Practice schedules affect how learners correct their errors: Secondary analysis from a contextual interference study. *Journal Motor Learning and Development*, 388-411.
79. **Lohse, K.R.** (2022). No estimation without inference: A response to the International Society of Physiotherapy Journal Editors. *Communications in Kinesiology*, 1(4). <https://doi.org/10.51224/cik.2022.49>.
80. **Lohse, K.R.** (2022). In Defense of Hypothesis Testing: A Response to the Joint Editorial from the International Society of Physiotherapy Journal Editors on Statistical Inference Through Estimation. *Physical Therapy*, pzac118, <https://doi-org/10.1093/ptj/pzac118>.

81. \*Parma, J.O., Bacelar, M.F.B., Cabral, D.A.R., **Lohse, K.R.**, Hodges, N.J., & Miller, M.W. (2023). That Looks Easy! Evidence against the benefits of an easier criterion of success for enhancing motor learning. *Psychology of Sport and Exercise*.
82. \*Barth, J., **Lohse, K.R.**, Bland, M.D., & Lang, C.E. (2023). Predicting later categories of upper limb activity from earlier clinical assessments following stroke: An exploratory analysis. *Journal of Neuroengineering and Rehabilitation*, 20, 24. DOI: 0.1186/s12984-023-01148-1
83. \*de Havenon, A., Bangad, A., Skolarus, L.E., Aldridge, C.M., Braun, R., Cole, J.W., Cramer, S.C., Lindgren, A.G., Sunmonu, N.A., Worrall, B.B. & **Lohse, K.R.** (2023). Understanding patterns of missingness in acute ischemic stroke trials: A secondary analysis of pooled patient-level follow-up data. *Stroke*. 54. DOI: 10.1161/STROKEAHA.122.042168
84. Ploughman, M., Melam, G.R., Buragadda, S., **Lohse, K.R.**, Clift, F., Levin, M., & Donkers, S. (2023). Translingual neurostimulation combined with physical therapy to improve walking and balance in multiple sclerosis (NeuroMSTraLS): Study protocol for a randomized controlled trial. *Contemporary Clinical Trials*, 127. DOI: 10.1016/j.cct.2023.107142.
85. Peters, S., **Lohse, K.R.**, Klassen, T., Liu-Ambrose, T., Dukelow, S., Bayley, M., Hill, M., Pooyania, S., Yao, J., & Eng, J.J. (in press). Higher intensity walking improves global cognition during inpatient rehabilitation: A secondary analysis. *Frontiers in Neurology*. doi: 10.3389/fneur.2023.1023488

### **Peer-Reviewed Articles outside My Line of Research**

*These are publications outside of my line of research, but for which I met the ICMJE authorship criteria.*

1. MacInnis, M. J., **Lohse, K.R.**, Strong, J., & Koehle, M.S., (2015). Is previous history a reliable predictor for acute mountain sickness susceptibility? A meta-analysis of diagnostic accuracy. *British Journal of Sports Medicine*, 49, 69-75.
2. MacInnis, M., Nugent, S. MacLeod, K., & **Lohse, K.R.** (2015). Methods to estimate VO<sub>2</sub>max upon acute hypoxia exposure. *Medicine & Science in Sports & Exercise*, 47, 1869-1876.
  - a. Note that there was a rounding error in Eq. 3 of this manuscript. (The correct formula was presented in the appendix.) A corrigendum rectifying this error was published in MSSE in December, 2018.
3. Oliver, G., **Lohse, K.R.**, & Gascon, S. (2015). Kinematics and kinetics of youth baseball catchers and pitchers. *Sports*, 3, 246-257.
4. Daou, M., **Lohse, K.R.**, & Miller, M. W. (2016). Expecting to teach enhances motor learning and information processing during practice. *Human Movement Science*, 49, 336-345.
5. Sefton, J.M., **Lohse, K.R.**, & McAdam, J.S. (2016). Common fitness screen can predict injury and injury type in Army infantry, armor, and cavalry Trainees. *Journal of Athletic Training*, 51, 849-857.
6. Daou, M., Buchanan, T.L., Lindsay, K.R., **Lohse, K.R.**, & Miller, M.W. (2016). Expecting to teach enhances learning: Evidence from a motor learning paradigm. *Journal of Motor Learning and Development*, 4, 197-207.
7. Sefton, J.M., McAdams, J.S., Pascoe, D.D., **Lohse, K.R.**, Banda, R.L., Henault, C.B., Cherrington, A.R., & Adams, N.E. (2016). Evaluation of two heat mitigation methods in Army Trainees. *Journal of Athletic Training*, 51, 936-945.
8. Meadows, C.C., Gable, P.A., **Lohse, K.R.**, & Miller, M. W. (2017). Motivation and motor-preparatory brain activity can independently affect premotor reaction time. *Neuroscience*, 339, 174-179.
9. Holland, A.M., Mattson, C.D., Martin, J.S., **Lohse, K.R.**, Finn, P.R., & Stager, J.M. (2017). A cross-sectional study of physical activity and arterial compliance: The effects of age and artery size. *Journal of the American Society of Hypertension*, 11, 92-100.
10. Karlinsky, A., **Lohse, K. R.**, & Lam, M.Y. (2017). A meta-analysis of the Joint-Simon Effect. *Proceedings of the 39<sup>th</sup> Annual Conference of the Cognitive Science Society*.
11. Araújo, R., Hastie, P. A., **Lohse, K. R.**, Bessa, C., & Mesquita, I. (2017). The long-term development of volleyball game play performance using Sport Education and the Step-Game-Approach model. *European Physical Education Review*, 7, 243-267.
12. \*Brown, K.E., **Lohse, K.R.**, Mayer, I.S., Strigaro, G., Desikan, M., Casula, E.P., Meunier, S., Popa, T., Leavitt, B., Durr, A., Tabrizi, S.J., Rothwell, J.C., Boyd, L.A., & Orth, M. (2017). The reliability of commonly used electrophysiology measures. *Brain Stimulation*, 10, 1102-1111.
13. Daou, M., **Lohse, K.R.**, & Miller, M. W. (2017). To take the stairs or not to take the stairs? Employing the Reflective-Impulsive Model to predict spontaneous physical activity. *Sports*, 5(4), 75; doi: 10.3390/sports5040075
14. Peterson, D., **Lohse, K.R.**, & Mancini, M. (2018). Anticipatory postural responses prior to protective steps are similar in people with PD who do and do not freeze. *Gait & Posture*, 64, 126-129.
15. Chan, M., MacInnis, M.J., Koch, S., MacLeod, K.E., **Lohse, K.R.**, Gallo, M., Sheel, A.B., & Koehle, M.S. (2018).

- Cardiopulmonary demand of kettlebell snatches in Girevoy Sport. *Journal of Strength and Conditioning Research*.
16. McAdam, J. McGinnis, K.D., Beck, D.T., Haun, C.T., Romero, M.A., Mumford, P.W., Roberson, P.A., Young, K.C., **Lohse, K.R.**, Lockwood, C.M., Roberts, M.D., & Sefton, J.M., (2018). Effects of whey protein supplementation in Army initial entry training. *Nutrients*, *10*, 1248.
  17. Peterson, D., **Lohse, K.R.**, & Macini, M. (2018). Relating anticipatory postural adjustments to step outcomes during loss of balance in people with Parkinson's disease. *Neurorehabilitation and Neural Repair*, *32*, 887-898.
  18. Jaquess, K.J., Lo, L-C, Oh, H., Lu, C, Ginsberg, A., Tan, Y.Y., **Lohse, K.R.**, Miller, M.W., Hatfield, B.D., Gentili, R.J. (2018). Changes in mental workload and motor performance throughout multiple practice sessions under various levels of task difficulty. *Neuroscience*, *393*, 305-318.
  19. Daou, M., Rhaods, J.A., Jacobs, T. **Lohse, K.R.**, & Miller, M.W. (2019). Does limiting pre-movement time during practice eliminate the benefit of practicing while expecting to teach? *Human Movement Science*, *64*, 153-163.
  20. Carter, E.A., **Lohse, K.R.**, Sheel, A.W., & Koehle, M.S. (2019). Sildenafil does not reliably improve exercise performance in hypoxia: A systematic review. *British Medical Journal: Open*, *5* (1), e000526.
  21. Fawver, B., Thomas, J.L., Drew, T., Mills, M.K., Auffermann, W.F., **Lohse, K.R.**, Williams, A.M., (2020). Seeing isn't necessarily believing: Misleading contextual information influences perceptual-cognitive bias in radiologists. *Journal of Experimental Psychology Applied*, *26*, 579-592.
  22. \*Raffegeau, T.E., Fawver, B., Clark, M., Engel, B.T., Young, W.R., Williams, A.M., **Lohse, K.R.**, & Fino, P.C. (2020). The feasibility of using virtual reality to induce mobility-related anxiety during turning. *Gait & Posture*, *77*, 6-13.
  23. Fawver, B., Cowan, R.L., DeCouto, B., **Lohse, K.R.**, Podlog, L., & Williams, A.M. (2020). Psychological characteristics, sport engagement, and performance in alpine skiers. *Psychology of Sport and Exercise*, *47*, 101616.
  24. Gregory, S. **Lohse, K.R.**, Johnson, E., Leavitt, B., Durr, A., Roos, R.A.C., Rees., G., Tabrizi, S., Scahill, R., & Orth, M. (2020) Longitudinal structural MRI in neurologically healthy adults. *Journal of Magnetic Resonance Imaging*. doi: 10.1002/jmri.27203
  25. \*Raffegeau, T.E., Fawver, B., Young, W.R., Williams, A.M., **Lohse, K.R.**, & Fino, P.C. (2020). The direction of postural threat alters balance control responses when standing at virtual elevation. *Experimental Brain Research*, *238*, 2653-2663.
  26. Cowan, R.L., Fawver, B., **Lohse, K.R.**, Ford, P.R., & Williams, A.M., (2021). Modeling talent development pathways in alpine ski racers. *Psychology of Sport and Exercise*, *55*, 101942.
  27. DeCouto, B. S., Williams, A. M., **Lohse, K. R.**, Creem-Regehr, S. H., Strayer, D. L., & Fino, P. C. (2021). Anxiety does not always affect balance: the predominating role of cognitive engagement in a video gaming task. *Experimental Brain Research*, 1-14.
  28. Faw, T.D., Lakhani, B., Schmalbrock, P., Knopp, M.V., **Lohse, K.R.** et al. (2021). Eccentric-focused rehabilitation induces white matter plasticity and functional recovery in chronic spinal cord injury. *Experimental Neurology*, *346*, 113853.
  29. Wang, P., Hooyman, A., Schambra, H., **Lohse, K.R.**, Dettmer, A., & Schaefer, S.Y. (2021). Expectations from the general public about the efficacy of transcranial direct current stimulation for improving motor function. *Brain Stimulation*, *14*, 500-502.
  30. Ferguson, B.S., Neidert, L.E., Rogatski, M.J., **Lohse, K.R.**, Gladden, L.B., & Kluess, H.A. (2021). Red blood cell ATP release correlates with red blood cell hemolysis. *Cell Physiology*, *321*(5), C761-C769.
  31. Lanier, V.M., **Lohse, K.R.**, Hooker, Q., Francois, S., van Dillen, L.R. (2022). Treatment preferences change after exposure to treatment in adults with chronic low back pain. *Physical Medicine & Rehabilitation*.
  32. \*Wu, T., **Lohse, K.R.**, Van Dillen, L., Song, K., Clohisy, J.C., & Harris, M.D. (in press). Abnormal muscle biomechanics are associated with poor patient-reported outcomes in patients with developmental dysplasia of the hip. *Clinical Orthopedics and Related Research*.
  33. Raffegeau, T.E., Clark, M., Fawver, B., Engel, B.T., Young, W.R., Williams, A.M., **Lohse, K.R.**, & Fino, P.C. (in press). The effect of mobility-related anxiety on walking across the lifespan: A virtual reality simulation study. *Experimental Brain Research*.

### **Book Chapters**

1. **Lohse, K.R.**, & Bourne, L.E., Jr. (2012). Cognitive retraining following acquired brain injury. In A.F. Healy and L. E. Bourne, Jr. (Eds.), *Training cognition: Optimizing efficiency, durability, and generalizability* (pp. 307-325). London: Psychology Press.
2. **Lohse, K.R.** & Ketels, S.L. (2012). Implications of dual-process theories for optimizing motor learning and performance. In A. L. Magnusson & D. J. Lindberg (Eds). *Psychology of performance and defeat*. Hauppauge, NY: Nova Science Publishers.

3. **Lohse, K.R.**, Wulf, G., & Lewthwaite, R. (2012). Attentional focus affects movement efficiency. In N. J. Hodges and A. M. Williams (Eds.), *Skill acquisition in sport: Research, theory & practice, 2<sup>nd</sup> Ed* (pp. 40-58). New York, NY: Routledge.
4. Hodges, N.J., & **Lohse, K.R.** (2014). Motor control. In R. Eklund and G. Tenebaum (Eds.), *Encyclopedia of sport and exercise psychology*. New York, NY: Sage Publications.
5. **Lohse, K.R.** (2015). On attentional control: A dimensional framework for attention in expert performance. In D. Farrow and J. Baker (Eds.), *Routledge handbook of sports expertise*. New York, NY: Routledge.
6. **Lohse, K.R.**, & Hodges, N.J. (2015). Providing information for teaching skills in sport. M. Hughes and I. M. Franks (Eds.), *The Essentials of performance analysis: An introduction*, 2nd Ed. New York, NY: Routledge.
7. **Lohse, K.R.**, & Hodges, N.J. (2016). Developing motor skill in practice: Mastering 'heelflips'. *Applied sport & exercise psychology: Practitioner case-studies*. Hoboken, NJ: Wiley-Blackwell.
8. **Lohse, K.R.**, Miller, M.W., Bacelar, M., & Krigolson, O. (2020). Errors, rewards, and reinforcement in motor skill learning. In N. J. Hodges and A. M. Williams (Eds.), *Skill acquisition in sport: Research, theory & practice, 3<sup>rd</sup> Ed*. New York, NY: Routledge.

### **Pre-Prints (Not Peer-Reviewed)**

1. Caldwell, A. R., et al. (including **Lohse, K. R.**) (2019). Moving sport and exercise science forward: A call for the adoption of more transparent research practices. *SportRxiv*. doi: 10.31236/osf.io/fxe7a
2. **Lohse, K.R.**, Hawe, R.L., Dukelow, S.P., & Scott, S.H. (2020). Statistical considerations for drawing conclusions about recovery. *medRxiv*. doi: 10.1101/19013060
3. Liew, S-L. et al. (including **Lohse, K.R.**) (2020). The ENIGMA Stroke Recovery Working Group: Big data neuroimaging to study brain-behavior relationships after stroke. *PsyArXiv*. doi: 10.31234/osf.io/wu7mh
4. **Lohse, K.R.**, Taylor, J.A., Butson, M., Knight, E.J., Sainani, K.S., & Vickers, A.J. (2020). Systematic Review of the use of "Magnitude-Based Inference" in Sports Science and Medicine. *SportRxiv*. doi: 10.31236/osf.io/wugcr
5. Faw, T.D., Lakhani, B., Liu, H., Nguyen, H.T., Schmalbroack, P., Knopp, M.V., **Lohse, K.R.**, Kramer, J.L.K., McTigue, D.M., Boyd, L.A., & Basso, M. (2020). Eccentric-focused rehabilitation promotes myelin plasticity in individuals with chronic, incomplete spinal cord injury. *medRxiv*. doi: 10.1101/2020.04.27.20079970v1.
6. Lingo VanGilder, J., **Lohse, K.R.**, Duff, K., Wang, P., Schaefer, S.Y. (2020). Associations between Rey-Osterrieth Complex Figure test and motor skill learning in older adults. *bioRxiv*. doi: 10.1101/2020.09.27.315168
7. Pathania, A., Euler, M.J., Clark, M., Cowan, R., Duff, K., & **Lohse, K.R.** (2021). Resting EEG spectral slopes are associated with age-related differences in information processing speed. *medRxiv*.
8. Krishnagopal, S. **Lohse, K.R.**, Braun, Robynne (2021). Stroke recovery phenotyping through network trajectory approach and graph neural networks. *bioRxiv*.
9. \*Taylor, S., Fawver, B., Thomas, J.L., Williams, A.M., & **Lohse, K.R.** (2022). Practice schedules affect how learners correct their errors: Secondary analysis from a contextual interference study. *SportRxiv*.
10. **Lohse, K.R.** (2022). No Estimation without Inference: A Response to the International Society of Physiotherapy Journal Editors. *SportRxiv*.
11. **Lohse, K.R.**, Kozlowski, A., & Strube, M. (2022). Model specification in mixed-effects models: A focus on random effects. *arXiv*.

### **Conference Presentations**

*(This is an abbreviated list showing what I consider my most substantive presentations.)*

1. **Lohse, K. R.** (2014, November). How much is more? Meta-analytic approaches to studying dose in rehabilitation. *American Society for Neurorehabilitation*. Part of a symposium with Lara Boyd and Catherine Lang. Washington DC, US.
2. **Lohse, K.R.**, Boyd, L.A., & Hodges, N.J. (2015). Engaging environments enhance motor learning in a computer gaming task. *North American Society for the Psychology of Sport and Physical Activity*. Portland, OR.
3. **Lohse, K.R.**, Buchanan, T.L., & Miller, M.W. (2015). Under-powered and over-worked: Problems with data analysis in motor learning studies. *North American Society for the Psychology of Sport and Physical Activity*. Portland, OR.
4. **Lohse, K.R.**, Boyd, L.A., & Lang, C.E. (2015, October). Centralized Open-Access Research (COAR): A database for stroke rehabilitation. *American Society of Neurorehabilitation*. Chicago, IL.
5. Bland, M.D., **Lohse, K.R.**, & Lang, C.E. (2016, May). Quantifying change during outpatient stroke rehabilitation: A retrospective regression analysis. *9<sup>th</sup> World Congress for Neurorehabilitation*. Philadelphia, PA.
6. Hayward, K.S., Schmidt, J.Y., **Lohse, K.R.**, et al. (2016, May). Severe upper limb impairment after neurological injury: A systematic review of individual data or brain-derived biomarkers. *9<sup>th</sup> World Congress for Neurorehabilitation*.

Philadelphia, PA.

7. Leiker, A., Bruzi, A., Nelson, M., Wegman, R., Miller, M.W., & **Lohse, K.R.** (2016, June). The effects of self-controlled difficulty progression on engagement and learning in a computer gaming task. *North American Society for the Psychology of Sport and Physical Activity*. Montreal, QC.
8. **Lohse, K.R.** (2016, November). How do game mechanics in virtual environments impact motivation, engagement and motor learning in healthy young adults? In D. Levac (Chair), "Maximizing motivation and engagement during motor learning: insights from practice in a virtual environment" symposium at the 93<sup>rd</sup> *Annual Meeting of the American Congress of Rehabilitation Medicine*. Chicago, IL.
9. **Lohse, K.R.** (2016, November). Information architecture in rehabilitation trials: The Centralized Open-Access Rehabilitation Database for Stroke (SCOAR). In L. Sook-Liew and S. Cramer (Chairs), "Big Data' for Rehabilitation: Promises, Pitfalls, and Future Potential" symposium at the *Annual Meeting of the American Society of Neurorehabilitation*. San Diego, CA.
10. **Lohse, K.R.**, Pathania, A., Wegman, R., Boyd, L.A., & Lang, C.E. (2017, June). Insufficient reporting of control therapies in stroke rehabilitation trials: A systematic review and meta-analysis. *North American Society for the Psychology of Sport and Physical Activity*, San Diego, CA.
11. Hayward, K.S., Ferris, J.K., **Lohse, K.R.**, Cramer, S.C., Borich, M.R., Stewart, J.C., Borstad, A., Dukelow, S., Cassidy, J., Findlater, S., Neva, J.L., Liew, S.L., & Boyd, L.A. (2017, November). Regional diffusion differences in people with severe upper limb impairment post-stroke: A preliminary neuroimaging mega-analysis. Poster presentation at the *Annual Meeting of the American Society of Neurorehabilitation*. Washington DC.
12. **Lohse, K.R.**, (2018, June). Longitudinal data-analysis techniques in motor learning and development: A focus on time-varying covariates. Symposium presentation at the annual meeting of the *North American Society for the Psychology of Sport and Physical Activity*. Denver, CO.
13. **Lohse, K.R.**, (2018, June). Exploring Measurement and Methodology in Motor Behavior. Presentation at the *North American Society for the Psychology of Sport and Physical Activity*. Denver, CO. (*I gave this talk upon receipt of my Early Career Distinguished Scholar Award from NASPSPA.*)
14. **Lohse, K.R.**, Zheng, T., Greene, T., Kean, J., Presson, A., Shen, J.C. (2018, November). Inpatient Cognitive Rehabilitation following Traumatic Brain Injury: Main Effects and Patient by Therapy Interactions using Causal Inference Models. Poster presentation at the annual meeting of the *American Society for Neurorehabilitation*. San Diego, CA.
15. Hayward, K.S., Ferris, J.K., **Lohse, K.R.**, Borich, M.R., Cramer S.C., Borstad, A., Stewart, J.C., Cassidy, J., Neva, J.L., & Boyd, L.A. (2018, November). Severity of Impairment is Important when Exploring Biomarkers of Upper Limb Outcome Post-Stroke. Poster presentation at the annual meeting of the *American Society for Neurorehabilitation*. San Diego, CA. (*Won the 2018 Fletcher H. McDowell Award for the best clinical science abstract.*)
16. **Lohse, K.R.** (2019, October). Data visualization: From quality assurance to final publication. Part of "Reliability and Reproducibility in Neurorehabilitation Research" with Liew, S-L. and Finley, J.M. at the annual meeting of the *American Society for Neurorehabilitation*. Chicago, IL.
17. Pathania, A., Clark, M., Cowan, R., Williams, E., Raffegeau, T.E., Euler, M., Duff, K. & **Lohse, K.R.** (2020, June). Explaining age-related declines in cognitive and motor function with EEG power spectra: A cross-sectional feasibility study. Oral presentation at the annual meeting of the *North American Society for the Psychology of Sport and Physical Activity*.
18. McPherson LM, Negro F, Thompson CK, **Lohse K**, Powers RK, Farina D, Heckman CJ, Dewald JP. (2021) Pathological inhibition limits motor unit rate modulation during voluntary contractions in a muscle-dependent manner post-stroke. At the annual meeting of the *American Society for Neurorehabilitation*. Virtual.
19. Taylor, S., Fawver, B., Thomas, J., Williams, A.M., & **Lohse, K.R.** (2022, June). Chaotic practice schedules create more orderly responses: A paradoxical secondary analysis. Oral presentation at the annual meeting of the *North American Society for the Psychology of Sport and Physical Activity*
20. **Lohse, K.R.**, Bacelar, M.F.B., Parma, J., Cabral, D., St. Germain, L., McKay, B., Carter, M.J., & Miller, M.W. (2022, June). Making Strong Predictions: Testing Causal Hypotheses in Motor Behavior Studies. Oral presentation at the annual meeting of the *North American Society for the Psychology of Sport and Physical Activity*.
21. Aldridge, C., Krishnagopal, S., **Lohse, K.R.**, Hsu, F-C., Keene, K., Worrall, B., & Braun, R. (February, 2023). Genome Wide Association Study Of Stroke Recovery Phenotypes Defined By Serial NIH Stroke Scale Scores. Oral presentation at the *AHA International Stroke Conference*.
22. de Havenon, A., Skolarus, L.E., Aldridge, C.M., Braun, R.G., Cole, J.W., Cramer, S.C., Lindgren, A.G., Sunmonu, N.A., Worrall, B.B., & **Lohse, K.R.** (February, 2023). Understanding patterns of missingness in acute ischemic stroke trials: A secondary analysis of pooled patient-level follow-up data. Oral presentation at the *AHA International Stroke Conference*.