1. **Title**: How movement variability constrains locomotor use-dependent learning
2. **Abbreviated title**: Movement variability and use-dependent learning
3. **Authors and Affiliations**: Jonathan M Wood1,2, Susanne M Morton1,2, Hyosub E Kim1-4
4. Physical Therapy Department, University of Delaware, Newark, DE, 19713, United States.
5. Graduate Program in Biomechanics & Movement Science, University of Delaware, Newark, DE, 19713, United States.
6. Department of Psychological & Brain Sciences, University of Delaware, Newark, DE, 19713, United States.
7. Department of Biomedical Engineering, University of Delaware, Newark, DE, 19713, United States.
8. **Author contributions**: JMW and HEK designed research; JMW and HEK wrote and prepared original draft; JMW, SMM and HEK reviewed and edited the manuscript.
9. **Correspondence should be addressed to**:

Jonathan Wood

Email: jonwood@udel.edu

University of Delaware

STAR Health Sciences Complex

540 S. College Ave, Suite 210-Z

Newark, DE 19713

1. **Acknowledgements:** We would like to thank Margaret French for her helpful comments on this Registered Report.
2. **Conflicts of Interest:** Authors report no conflict of interest
3. **Funding sources:** NIH K12 (“Comprehensive Opportunities in Rehabilitation Research Training”) to HEK