| OMB No. 0925-0001 and 0925-0002 (Rev. 03/2020 Approved Through 02-28-2023) |
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| **BIOGRAPHICAL SKETCH** |
| Provide the following information for the Senior/key personnel and other significant contributors. |
| Follow this format for each person. DO NOT EXCEED FIVE PAGES. |
| NAME: Howard, Waylon |
| eRA COMMONS USERNAME (credential, e.g., agency login): waylonh |
| POSITION TITLE: Principal Biostatistician |
| *EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)* |

| INSTITUTION AND LOCATION | DEGREE (if applicable) | Completion Date MM/YYYY | FIELD OF STUDY |
| --- | --- | --- | --- |
| University of Kansas, Lawrence, KS | PhD | 05/2012 | Quantitative Psychology |
| Emporia State University, Emporia, KS | MS | 05/2006 | Experimental Psychology |
| Lyon College, Batesville, AR | BA | 05/2004 | Psychology |
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##### A. Personal Statement

Originally trained as a Quantitative Psychologist, I have studied applied statistics and research methodology for over 10 years and gone on to develop advanced expertise in the application and advancement of quantitative measurement and analysis practices within the social, behavioral, and health sciences. My research interests include modeling individual, group, and developmental differences, general structural equations modeling techniques (e.g., MACS, Growth Curve, HLM, mediation), construct validation, measurement, selection effects, and missing data analysis. I have served as collaborator, consultant, and significant contributor for successful NIH U01-, R21-, R01-; NSF-; and IES-funded grants. In addition, I have served as the Director of research for several applied statistical science groups across academic, industry, and non-profit research organizations. I have also successfully organized, managed, and taught a week-long summer statistics workshop series at the University of Massachusetts including basic and advanced courses (total participants = 60) focused on advanced statistical training at the graduate and post-graduate level. As an interdisciplinary-oriented collaborator, my work has appeared in 22 different peer-reviewed journals and been cited 741 times, with an h-index of 13, and an i-10 index of 16. I have served as a reviewer for 7 different scientific journals and have served as a statistical consultant on more than 15 contracts.

1. Chan CS, Rhodes JE, Howard WJ, Lowe SR, Schwartz SEO, Herrera C (2013). Pathways of influence in school-based mentoring: The mediating role of parent and teacher relationships. Journal of School Psychology, 51 (1), 129-142.
2. Howard WJ, Rhemtulla M, Little TD (2015). Using principal components as auxiliary variables in missing data estimation. Multivariate Behavioral Research, 50 (3), 285-299.
3. Nicholson JS, Deboeck PR, Howard W (2017). Attrition in developmental psychology: A review of modern missing data reporting and practices. International Journal of Behavioral Development, 41 (1), 143-153.

##### B. Positions and Honors

Positions and Employment

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| --- | --- |
| 2012-2014 | Director of Research and Evaluation, Maryland Ctr. for Developmental Disabilities Kennedy Krieger Institute, Baltimore, MD |
| 2013-2015 | Senior Research Data Analyst, Biostatistics, Epidemiology and Data Management Core, Johns Hopkins University, Bayview, MD |
| 2014-2015 | Visiting Assistant Professor, Dept. of Public Health, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD |
| 2014-2015 | Affiliated Faculty Member, Wendy Klag Center for Autism and Developmental Disabilities, Johns Hopkins University, Baltimore, MD |
| 2014-2015 | Faculty Research Methodologist, Inst. for Social Science Research, University of Massachusetts, Amherst, MA |
| 2015-2018 | Director of Biostatistics, Epidemiology, Econometrics, and Programming Core, Center for Child Health, Behavior and Development, Seattle Children’s Research Inst., Seatle, WA |
| 2018-2019 | Director of Biostatistics and Data Management, Center for Outcomes Research and Evaluation, Atrium Health, Charlotte, NC |
| 2019-2019 | Statistical Manager, Statistical Center for HIV/AIDS Research and Prevention (SCHARP), Fred Hutchinson Cancer Research Center, Seattle, WA |
| 2019-2021 | Global Director of Biostatistics and Data Analytics, Health Economics and Outcomes Research, ConcertAI, Boston, MA |
| 2021-2022 | Director of Research, Patient Centered Outcomes, Open Health, Bethesda, MD |
| 2019- | Adjunct Researcher, Juniper Gardens Children's Project, The University of Kansas, Lawrence, KS |
| 2022- | Principal Biostatistician, Biostatistics Epidemiology and Analytics in Research, Seattle Children’s Research Inst., Seattle, WA |

Other Experience and Professional Memberships

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| --- | --- |
| 2006- | Member, Psi Chi (534155) |
| 2011- | Member, Association for Psychological Science (73679) |
| 2010-2011 | Member, American Psychological Association |
| 2010-2011 | Member, Evaluation, Measurement, and Statistics: APA Division 5 |
| 2012-2013 | Member, American Educational Research Association |
| 2012-2015 | Member, Society for Research in Child Development |
| 2012-2015 | Member, Society for Research on Adolescence |
| 2014-2015 | Member, American Statistical Association |
| 2014-2015 | Member, American Evaluation Association |

Honors

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| 2003 | National Science Foundation REU program recipient with international dimension |
| 2006 | Best Empirical Research Paper Award from the Association for Psychological and Educational Research in Kansas |
| 2012 | Dissertation Award from the Society for Multivariate Experimental Psychology |
| 2014 | Patterson Decade Award from Lyon College |

##### C. Contribution to Science

1. **Methods Development and Reporting.** My primary area of research is the development of novel statistical methods to better translate experimental simulation-based best practices into real-world settings where the application is often not so good. In the applied setting we have to solve all kinds of limitations. One of my main areas of interest has been missing data where I have led simulation-based research and contributed to best practice recommendations for applied researchers. In 2012, I was awarded a research grant by the Society for Multivariate Experimental Psychology for the special emphasis of this work on multivariate approaches to the measurement and analysis of substantive problems. In 2021, I attained more than $200k in external pharmaceutical client support for statistical methodology development in missing data analysis and reporting guidelines.
   1. Howard, W. J., Rhemtulla, M., and Little, T. D. (2015). Using principal components as auxiliary variables in missing data estimation. Multivariate Behavioral Research, 50(3):285–299
   2. Nicholson, J. S., Deboeck, P. R., and Howard, W. (2017). Attrition in developmental psychology: A review of modern missing data reporting and practices. International Journal of Behavioral Development, 41(1):143–153
   3. Zhou, C., Gao, Y., and Howard, W. (2017). Evaluation of combining bootstrap with multiple imputation using r on knights landing platform. In 2017 IEEE 4th International Conference on Cyber Security and Cloud Computing (CSCloud), pages 14–17. IEEE
2. **Statistics and modern quantitative methods.** Over simplified data analytic practices persist within the social, behavioral, and health sciences. Our vision of research is constrained by how we think about and use data. Too often we develop intricate theories about how the world works, which represent a lot of deep thinking about a topic, only to cut them up into smaller chunks that are then crammed into canned statistical procedures that were never designed to address the original question to begin with. I am committed to identifying such practices, providing modern demonstrations of their disadvantages, and explaining available alternatives, to discourage their further use. We often want to know how (mediation) and when (moderation) predictive relations hold or are strong versus weak or want more flexibility in examining change over time. To this aim, I have directly collaborated with researchers to garner new research funding and developed considerable experience applying diverse best-practice methods to complex problems in new areas.
   1. Law, E. F., Fisher, E., Howard, W. J., Levy, R., Ritterband, L., and Palermo, T. M. (2017). Longitudinal change in parent and child functioning after internet-delivered cognitive-behavioral therapy for chronic pain. Pain, 158(10):1992
   2. Chan, C. S., Rhodes, J. E., Howard, W. J., Lowe, S. R., Schwartz, S. E., and Herrera, C. (2013). Pathways of influence in school-based mentoring: The mediating role of parent and teacher relationships. Journal of School Psychology, 51(1):129–142
   3. Okech, D., Howard, W. J., Matthew, R. A., and Purser, G. L. (2020). The effects of sociodemographic variables on the economic behaviour of poorer households in the US and Kenya: a cross-national analysis. Journal of Contemporary African Studies, 38(4):541–559
   4. Okech, D., Hansen, N., Howard, W., Anarfi, J. K., and Burns, A. C. (2018). Social support, dysfunctional coping, and community reintegration as predictors of PTSD among human trafficking survivors. Behavioral medicine, 44(3):209–218

Complete List of Published Work in MyBibliography:

[www.ncbi.nlm.nih.gov/myncbi/waylon.howard.1/cv/125974](https://www.ncbi.nlm.nih.gov/myncbi/waylon.howard.1/cv/125974)

##### D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

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| --- | --- | --- |
| R21NR017312 | Tonya Palermo | 09/21/2017-08/31/2020 |

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| Role of sleep deficiency in self-management of pediatric chronic pain |

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| The objective of this application is to characterize how sleep deficiency influences youths’ ability to engage with, implement, and benefit from a pain self-management intervention. |

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| Role: Collaborator |

Completed Research Support

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| R21NR017312 | Tonya Palermo | 09/21/2017-08/31/2020 |

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| Role of sleep deficiency in self-management of pediatric chronic pain |

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| The objective of this application is to characterize how sleep deficiency influences youths’ ability to engage with, implement, and benefit from a pain self-management intervention. |

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| Role: Collaborator |

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| U01CE002880 | Emily Kroshus | 09/30/2017-09/29/2021 |

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| One Team: Changing the culture of youth sport |

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| Sports-related concussion in youth is increasingly being recognized as a public health concern. We propose an intervention that will utilize safety huddles to shift the culture of youth sport. At the completion of this research, we will have an intervention that will shift the culture of safety in youth sport and that can reach all youth sport stakeholders, including those in low resource communities. |

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| Role: Collaborator |