| OMB No. 0925-0001 and 0925-0002 (Rev. 10/2021 Approved Through 01/31/2026) |
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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 Name, Location | PhD | 05/2012 | Quantitative Psychology |
| University Name, Location | MS | 05/2006 | Experimental Psychology |
| University Name, Location | BA | 05/2004 | Psychology |
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##### A. Personal Statement

As a seasoned biostatistician and research methodologist, I have dedicated my career to advancing statistical techniques and driving innovation in social, behavioral, and health science research. With a Ph.D. in Quantitative Psychology from the University of Kansas (2012), I have honed my expertise in study design, data analysis, and statistical modeling, with a particular focus on multilevel modeling, structural equation modeling, and longitudinal data analysis. Throughout my career, I have demonstrated leadership in directing research teams, mentoring junior statisticians and researchers, and contributing to numerous publications and presentations. My professional experience spans various organizations, including academic institutions, research institutes, and industry partners, allowing me to develop a well-rounded perspective on biostatistical applications in diverse contexts. In my roles as principal biostatistician and director of research methods and data analysis, I have led the development of manuscripts, authored grant analysis sections, and conducted cutting-edge methodological research. Additionally, I have provided mentorship and training to junior statisticians, programmers, faculty investigators, and research assistants, fostering a collaborative and growth-oriented research environment. As an interdisciplinary-oriented collaborator, my work has appeared in 28 different peer-reviewed journals and been cited 1048 times, with an h-index of 16, and an i-10 index of 17. I have served as a reviewer for 7 different scientific journals and have served as a statistical consultant on more than 15 contracts. My comprehensive experience and deep understanding of biostatistical methods position me as an ideal candidate to contribute to the success of this project. I am confident in my ability to leverage my skills and knowledge to drive meaningful advancements and support the project’s goals effectively.

Ongoing and recently completed projects that I would like to highlight include:

R01 DE033703 McKinney (PI), Role: co-investigator 12/01/24 – 11/30/29 Leveraging Data for Infants with Cleft to Grow and Flourish: BLOOM

PCORI Christakis & Kroshus (PIs), Role: co-investigator 10/01/24 – 11/30/26 Developing a multi-dimensional measure of adolescent engagement in research

Citations:

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, Scientific Appointments, and Honors

Positions and Scientific Appointments

|  |  |
| --- | --- |
| 2012-2014 | Position Title, Department Name, Organization Name, Location |
| 2013-2015 | Position Title, Department Name, Organization Name, Location |
| 2014-2015 | Position Title, Department Name, Organization Name, Location |
| 2014-2015 | Position Title, Department Name, Organization Name, Location |
| 2014-2015 | Position Title, Department Name, Organization Name, Location |
| 2015-2018 | Position Title, Department Name, Organization Name, Location |
| 2018-2019 | Position Title, Department Name, Organization Name, Location |
| 2019-2019 | Position Title, Department Name, Organization Name, Location |
| 2019-2021 | Position Title, Department Name, Organization Name, Location |
| 2021-2022 | Position Title, Department Name, Organization Name, Location |
| 2019- | Position Title, Department Name, Organization Name, Location |
| 2022- | Position Title, Department Name, Organization Name, Location |

Other Experience and Professional Memberships

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| --- | --- |
| 2006- | Member, Psi Chi |
| 2011- | Member, Association for Psychological Science |
| 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 award recipient with international dimension |
| 2006 | Best Research Paper Award |
| 2012 | Dissertation Award |
| 2014 | Decade Award |

##### 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:

<https://www.ncbi.nlm.nih.gov/myncbi/1FuaABUhp7e5s/bibliography/public/>

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

Ongoing Research Support

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| --- | --- | --- |
| 100 | name 1 | 09/21/2017-08/31/2020 |

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| Title 1 |

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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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| 102 | name 3 | 09/21/2017-08/31/2020 |

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| --- |
| Title 3 |

|  |
| --- |
| 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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| 101 | name 2 | 09/30/2017-09/29/2021 |

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| Title 2 |

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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 |