

Michael C. Edwards

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Professional Appointments

- 2019 – Present Professor, Psychology (Quantitative)
Arizona State University
- 2018 – Present Chief Strategy Officer
Vector Psychometric Group, LLC
- 2016 – 2019 Associate Professor, Psychology (Quantitative)
Arizona State University
- 2011 – 2016 Associate Professor, Psychology (Quantitative)
The Ohio State University
- 2007 – Present Managing Partner
Vector Psychometric Group, LLC
- 2006 – 2011 Assistant Professor, Psychology (Quantitative)
The Ohio State University

Educational Background

- 2005 PhD, Quantitative Psychology
L.L. Thurstone Psychometric Laboratory
University of North Carolina at Chapel Hill
Advisor: David Thissen, Ph.D.
Dissertation: *A Markov Chain Monte Carlo Approach to Confirmatory Item Factor Analysis*
- 2002 MA, Quantitative Psychology
L.L. Thurstone Psychometric Laboratory
University of North Carolina at Chapel Hill
Advisor: Jack Vevea, Ph.D.
Thesis: *Augmenting IRT Scale Scores: A Monte Carlo Study to Evaluate an Empirical Bayes Approach to Subscale Augmentation*
- 2000 BS, Psychology with a second major in English
Ursinus College, Collegeville, PA

Published Papers

- In Press Gunn, H.J., Grimm, K.J., & Edwards, M.C. Evaluation of six effect size measures of measurement non-invariance for continuous outcomes. *Structural Equation Modeling*.
- In Press Manapat, P.D., Edwards, M.C., MacKinnon, D.P., Poldrack, R.A., & Marsch, L.A. A psychometric analysis of the Brief Self-Control Scale. *Assessment*.
- 2019 Du, H., Edwards, M.C., Zhang, Z. Bayes factor in one sample tests of means with a sensitivity analysis: A discussion of separate prior distributions. *Behavior Research Methods*, 51, 1998-2021.

- 2019 Scahill, L., Lecavalier, L., Schultz, R.T., Evans, A.N., Maddox, B., Pritchett, J., Herrington, J., Gillespie, S., Miller, J., Amoss, R.T., Aman, M.G., Bearss, K., Gadow, K., & Edwards, M.C. Development of the Parent-rated Anxiety Scale for Youth with Autism Spectrum Disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 58, 887-896.
- 2018 Edwards, M.C., Houts, C.R., & Cai, L. A diagnostic procedure to detect departures from local independence in item response models. *Psychological Methods*, 23, 138-149.
- 2018 Edwards, M.C., Houts, C.R., & Wirth, R.J. Measurement invariance, the lack thereof, and modeling change. *Quality of Life Research*, 27, 1735-1743.
- 2018 Edwards, M.C., Slagle, A., Rubright, J.D., & Wirth, R.J. Fit for purpose and modern validity theory in clinical outcomes assessment. *Quality of Life Research*, 27, 1711-1720.
- 2018 Houts, C.R., Morlock, R.J., Blum, S.I., Edwards, M.C., & Wirth, R.J. Scale development with small samples: A new application of longitudinal item response theory. *Quality of Life Research*, 27, 1721-1734.
- 2018 Pajer, K., Edwards, M.C., Lourie, A., Fields, S., Kalman, S. Depressive symptoms, hostility, and hopelessness in inner-city adolescent health clinic patients: Factor structure and demographic correlates. *International Journal of Adolescent Medicine and Health*, 30(1).
- 2018 Shono, Y., Ames, S.L., Edwards, M.C., & Stacy, A.W. The Rutgers Alcohol Problem Index for Adolescent Alcohol and Drug Problems: A Comprehensive Modern Psychometric Study. *Journal of Studies on Alcohol and Drugs*, 79(4), 658-663.
- 2018 Shono, Y., Edwards, M.C., Ames, S.L., & Stacy, A.W. Trajectories of cannabis-related associative memory among vulnerable adolescent: Psychometric and longitudinal evaluations. *Developmental Psychology*, 54(6), 1148-1158.
- 2017 Edwards, M.C., & Houts, C.R. Conceptual overview of computerized adaptive testing. *Value and Outcomes Spotlight*, 3, 11-12.
- 2017 Mielenz, T.J., Callahan, L.F., & Edwards, M.C. Average versus item response scores: An illustration using neighborhood measures in relation to physical activity in adults with arthritis. *Public Health*, 142, 15-21.
- 2016 Houts, C.R., Wirth, R.J., Edwards, M.C., & Deal, L. A review of empirical research related to the use of small quantitative samples in clinical outcome scale development. *Quality of Life Research*, 25, 2685-2691.
- 2016 Malarkey, W.B., David, P., Gouin, J-P, Edwards, M.C., Klatt, M., & Zautra, A.J. REMAP – A resilience resources measure for prediction and management of health symptoms. *International Journal of Behavioral Medicine*, 23, 738-745.
- 2016 May, K., Guccione, A., Goldstein, M., & Edwards, M.C. The Adolescent Measure of Confidence in Musculoskeletal Performance: Development and initial validation. *International Journal of Sports Physical Therapy*, 11(5), 698-707.

- 2016 Mielenz, T.J., Callahan, L.F., & Edwards, M.C. Item response theory analysis of Centers for Disease Control and Prevention Health-Related Quality of Life (CDC HRQOL) items in adults with arthritis. *Health and Quality of Life Outcomes* 14:43.
- 2016 Stanley, L.M., & Edwards, M.C. Reliability and model fit. *Educational and Psychological Measurement*, 76, 976-985.
- 2016 Wirth, R.J., Edwards, M.C., Henderson, M., Henderson, T., Olivares, G., & Houts, C.R. Development of the Contact Lens User Experience: CLUE scales. *Optometry and Vision Science*, 93, 801-808.
- 2015 Houts, C.R., & Edwards, M.C. Comparing surface and underlying local dependence levels via polychoric correlations. *Applied Psychological Measurement*, 39(4), 293-302.
- 2015 Mielenz, T.J., Edwards, M.C., Jackman, A.M., & Carey, T.S. Item response theory analysis of the Modified Roland-Morris Disability Questionnaire in a population-based study. *Spine*, 40(6), E366-371.
- 2013 Edwards, M.C. Purple unicorns, true models, and other things I've never seen. *Measurement: Interdisciplinary Research and Perspectives*, 11, 107-111.
- 2013 Houts, C.R., & Edwards, M.C. The performance of local dependence measures with psychological data. *Applied Psychological Measurement*, 37, 541-562.
- 2013 Wu, S.M., Schuler, T.A., Edwards, M.C., Yang, H-C., & Brothers, B.M. Factor analytic and item response theory evaluation of the Penn State Worry Questionnaire in women with cancer. *Quality of Life Research*, 22, 1441-1449. DOI: 10.1007/s11136-012-0253-0
- 2012 Edwards, M.C., Flora, D.B., Thissen, D. Multi-stage computerized adaptive testing with uniform item exposure. *Applied Measurement in Education*, 25, 118-141. DOI: 10.1080/08957347.2012.660363
- 2012 Lee, C., Zhang, G., & Edwards, M.C. Ordinary least squares estimation of parameters in exploratory factor analysis with ordinal data. *Multivariate Behavioral Research*, 47, 314-339. DOI: 10.1080/00273171.2012.658340
- 2012 MacCallum, R.C., Edwards, M.C., & Cai, L. Hopes and cautions in implementing Bayesian structural equation modeling. *Psychological Methods*, 17, 340-345. DOI: 10.1037/a0027131
- 2012 Norris, M., Lecavalier, L., & Edwards, M.C. The structure of autism symptoms as measured by the Autism Diagnostic Observation Schedule. *Journal of Autism and Developmental Disorders*, 42, 1075-1086. DOI: 10.1007/s10803-011-1348-0
- 2011 Lecavalier, L., Gadow, K.D., DeVincent, C.J., Houts, C.R., & Edwards, M.C. Validity of DSM-IV syndromes in preschoolers with autism spectrum disorders. *Autism*, 15, 527-543. DOI: 10.1177/1362361310391115
- 2011 Mielenz, T.J., Edwards, M.C., & Callahan, L. Item response theory analysis of two self-efficacy for exercise behavior scales in people with arthritis. *Journal of Aging and Physical Activity*, 19, 239-248.

- 2010 Edwards, M.C. A Markov chain Monte Carlo approach to confirmatory item factor analysis. *Psychometrika*, *75*, 474-497. DOI: 10.1007/s11336-010-9161-9
- 2010 Edwards, M.C., Cheavens, J.S., Heiy, J.E., & Cukrowicz, K.C. A reexamination of the factor structure of the Center for Epidemiologic Studies Depression Scale: Is a one-factor model plausible? *Psychological Assessment*, *22*, 711-715. DOI: 10.1037/a0019917
- 2010 Mielenz, T.J., Edwards, M.C., & Callahan, L.F. First item response theory analysis on Tampa Scale for Kinesiophobia (fear of movement) in arthritis. *Journal of Clinical Epidemiology*, *63*, 315-320. DOI: 10.1016/j.jclinepi.2009.04.011
- 2010 Mielenz, T.M., Edwards, M.C., & Callahan, L.F. Item response theory analysis of two questionnaire measures of arthritis-related self-efficacy beliefs from community-based US samples. *Arthritis*, *2010*, 1-8. DOI: 10.1155/2010/416796
- 2010 Turner, B.M., Betz, N.E., Edwards, M.C., & Borgen, F.H. Psychometric examination of an inventory of self-efficacy for the Holland vocational themes using item response theory. *Measurement and Evaluation in Counseling and Development*, *43*, 188-198. DOI:10.1177/0748175610384810
- 2009 Edwards, M.C. An introduction to item response theory using the Need for Cognition Scale. *Social and Personality Psychology Compass*, *3*, 507-529. DOI: 10.1111/j.1751-9004.2009.00194.x
- 2009 Edwards, M.C., & Wirth, R.J. Measurement and the study of change. *Research in Human Development*, *6*, 74-96. DOI: 10.1080/15427600902911163
- 2009 Lecavalier, L., Gadow, K.D., DeVincent, C.J., & Edwards, M.C. Validation of DSM-IV model of psychiatric syndromes in children with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, *39*, 278-289. DOI: 10.1007/s10803-008-0622-2
- 2009 Lecavalier, L., Gadow, K.D., DeVincent, C.J., Houts, C., & Edwards, M.C. Deconstructing the PDD clinical phenotype: Internal validity of the DSM-IV. *Journal of Child Psychology and Psychiatry*, *50*, 1246-1254. DOI:10.1111/j.1469-7610.2009.02104.x
- 2009 Stevens, J., Wang, W., Fan, L., Edwards, M.C., Campo, J.V., & Gardner, W. Parental attitudes toward children's use of antidepressants and psychotherapy. *Journal of Child and Adolescent Psychopharmacology*, *19*, 289-296. DOI: 10.1089/cap.2008.0129
- 2008 Flora, D.B., Curran, P.J., Hussong, A.M., & Edwards, M.C. Incorporating measurement nonequivalence in a cross-study latent growth curve analysis. *Structural Equation Modeling*, *15*, 676-704. DOI: 10.1080/10705510802339080
- 2007 Chang, E.C., Sanna, L.J., Riley, M.M., Thornburg, A.M., Zumberg, K.M., & Edwards, M.C. Relations between problem-solving styles and psychological adjustment in young adults: Is stress a mediating variable? *Personality and Individual Differences*, *42*, 135-144. DOI:10.1016/j.paid.2006.06.011
- 2007 Hill, C.D., Edwards, M.C., Thissen, D., Langer, M.M., Wirth, R.J., Burwinkle, T.M., & Varni, J.W. Practical issues in the application of item response theory: A demonstration using the Pediatric Quality of Life Inventory (PedsQL) 4.0 Generic Core Scales. *Medical Care*, *45*, S39-S47.

- 2007 Hussong, A.M., Wirth, R.J., Edwards, M.C., Curran, P.J., Chassin, L.A., & Zucker, R.A. Externalizing symptoms among children of alcoholic parents: Entry points for an antisocial pathway to alcoholism. *Journal of Abnormal Psychology, 116*, 529-542. DOI: 10.1037/0021-843X.116.3.529
- 2007 Wirth, R.J., & Edwards, M.C. Item factor analysis: Current approaches and future directions. *Psychological Methods, 12*, 58-79. DOI: 10.1037/1082-989X.12.1.58
- 2006 Edwards, M.C., & Vevea, J.L. An empirical Bayes approach to subscore augmentation: How much strength can we borrow? *Journal of Educational and Behavioral Statistics, 31*, 241-259.
- 2006 Orlando, M., Wenzel, S.L., Ebener, P., Edwards, M.C., Mandell, W., & Becker, K. The Dimensions of Change in Therapeutic Community Treatment Instrument. *Psychological Assessment, 18*, 118-122. DOI: 10.1037/1040-3590.18.1.118

Chapters

- 2015 Edwards, M.C., Wirth, R.J., Houts, C.R., & Bodine, A.J. Three (or four) factors, four (or three) models. In S. P. Reise & D. Revicki (Eds.), *Handbook of item response theory modeling: Applications to typical performance assessment* (pp. 159-182). New York, NY: Routledge.
- 2012 Edwards, M.C., & MacCallum, R.C. Complexity and meaning in latent variable modeling. In M.C. Edwards & R.C. MacCallum (Eds.), *Current issues in the theory and application of latent variable models* (pp.1-8). New York, NY: Taylor & Francis.
- 2012 Edwards, M.C., & Wirth, R.J. Valid measurement without factorial invariance: A longitudinal example. In J.R. Harring & G.R. Hancock (Eds.), *Advances in longitudinal methods in the social and behavioral sciences* (pp. 289-311). Charlotte, NC: IAP.
- 2012 Edwards, M.C., Wirth, R.J., Houts, C.R., & Xi, N. Categorical data in the structural equation modeling framework. In R. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 195-208). New York, NY: Guilford Press.
- 2010 Bollen, K.A., Bauer, D.J., Christ, S.L., & Edwards, M.C. Overview of structural equation models and recent extensions. In S. Kolenikov, D. Steinley, & L. Thombs (Eds.), *Statistics in the social sciences: Current methodological developments* (pp. 37-79). Hoboken, NJ: Wiley.
- 2009 Edwards, M.C., & Edelen, M.O. Special topics in item response theory. In R.E. Millsap and A. Maydeu-Olivares (Eds.), *The SAGE handbook of quantitative methods in psychology* (pp. 178-198). New York, NY: Sage Publications.
- 2008 Woods, C.M., & Edwards, M.C. Factor analysis and related methods. In C.R. Rao, J.P. Miller, & D.C. Rao (Eds.), *Handbook of statistics 27: Epidemiology and medical statistics* (pp. 367-394). New York, NY: Elsevier.
- 2007 Curran, P.J., Edwards, M.C., Wirth, R.J., Hussong, A.M., & Chassin, L. The incorporation of categorical measurement models in the analysis of individual growth. In T.D. Little, J.A. Bovaird, & N.A. Card (Eds.), *Modeling contextual effects in longitudinal studies* (pp. 89-120). Mahwah, NJ: LEA.

Books

- 2012 Edwards, M.C., & MacCallum, R.C. (Eds.) *Current issues in the theory and application of latent variable models*. New York, NY: Taylor & Francis.

Presentations

- 2018 (Aug)
Invited Edwards, M.C. The 2009 PRO Guidance: Observations from a practicing psychometrician. Presentation at the Duke Clinical Research Institute Enabling Patient Reported Outcomes Think Tank. Washington, DC.
- 2017 (Oct) Edwards, M.C. Reflections on philosophy of Science. Presentation at the annual meeting of the Society of Multivariate Experimental Psychology. Minneapolis, MN.
- 2017 (Sept)
Invited Edwards, M.C. What does model fit mean? Colloquium presentation at UMass Amherst REMP Program. Amherst, MA.
- 2017 (Sept)
Invited Edwards, M.C. Why won't people just give me what I want? A primer on negotiation. Workshop given as part of 2017 Emerging Scholar Series at University of Nebraska - Lincoln. Lincoln, NE.
- 2017 (Sept)
Invited Edwards, M.C. Where does philosophy fit in statistics? Workshop given as part of 2017 Emerging Scholar Series at University of Nebraska - Lincoln. Lincoln, NE.
- 2017 (Sept)
Invited Edwards, M.C. Does model fit have a validity problem? Keynote presentation given as part of 2017 Emerging Scholar Series at University of Nebraska - Lincoln. Lincoln, NE.
- 2017 (August)
Invited Edwards, M.C. The role of philosophy of science when teaching statistics to social scientists, or Two constructivists walk into a bar (or do they?). Keynote address at the annual meeting of the American Psychological Association. Washington, DC.
- 2017 (March)
Invited Edwards, M.C. Considering the relevance of philosophy of science to the teaching of statistics. Presentation at the Teaching Statistics and Quantitative Methods in the 21st Century Conference. Nashville, TN.
- 2017 (March) Lecavalier, L., Schultz, R.T., Aman, M., Bearss, K., Miller, J., Taylor, C., Herrington, J., Edwards, M., & Scahill, L. Toward outcome measurement of anxiety in youth with ASD. Presentation at the 50th Annual Gatlinburg Conference on Research and Theory in Intellectual and Developmental Disabilities. San Antonio, TX.
- 2017 (March) Xiong, X., & Edwards, M.C. Further exploration of design issues for multistage adaptive tests. Presentation at the annual meeting of the Association of Test Publishers. Scottsdale, AZ.
- 2016 (March)
Invited Edwards, M.C. What does model fit mean? Presentation at York University Quantitative Methods Forum. Toronto, Canada.
- 2015 (Oct) Edwards, M.C. Validity and model fit. Presentation at the annual meeting of the Society of Multivariate Experimental Psychology. Los Angeles, CA.
- 2014 (July)
Invited Edwards, M.C. Validity and model fit. Paper presented at the International Meeting of the Psychometric Society. Madison, WI.

- 2013 (May)
Invited Edwards, M.C. A fireside chat about the current state of factor analysis. Presentation made as part of the psychometric and quantitative psychology speaker series at Fordham University. Bronx, NY.
- 2013 (May)
Invited Edwards, M.C., & Keum, E. Rethinking reliability: Minimum detectable change in item response models. Presentation to the Research Division at the College Board. New York, NY.
- 2013 (May) Edwards, M.C., & Wirth, R.J. Using psychometrics to add value to PRO assessment. Presentation given at CBI's 10th Forum on Patient Reported Outcomes. Philadelphia, PA.
- 2013 (March)
Invited Edwards, M.C. A fireside chat about the current state of factor analysis. Presentation made as part of the quantitative psychology colloquium at the University of Notre Dame. Notre Dame, IN.
- 2012 (Oct)
Invited Edwards, M.C., & Keum, E. Rethinking reliability: Minimum detectable change in item response models. Presentation at the joint AICPA/CB/LSAC research series. Newtown, PA.
- 2012 (Aug)
Invited Edwards, M.C. Applications, implementations, and future directions of multidimensional item response theory. Presentation made as part of College Board's summer intern experience. Newtown, PA.
- 2011 (Oct)
Invited Edwards, M.C. Implications of applications: An examination of recent developments in item response theory. Seminar for the Biostatistics Seminar Series at Columbia University – New York State Psychiatric Institute, New York, NY.
- 2011 (Aug)
Invited Edwards, M.C. An overview of computational methods used in psychometric models. Presentation at the Workshop on Modern Psychometric and Statistical Methods for Large Scale Assessments, Beijing, China.
- 2011 (Aug) Edwards, M.C., & Cai, L. A new diagnostic procedure to detect departures from local independence in item response models. Paper presented at the annual meeting of the American Psychological Association, Washington, DC.
- 2011 (July) Tang, Y., Myung, J., Edwards, M.C., & Pitt, M. Computerized adaptive testing and adaptive experimental design. Paper presented at the International Meeting of the Psychometric Society, Hong Kong.
- 2011 (July) Edwards, M.C., Houts, C.R., & Cai, L. A new procedure for detecting departures from local independence in item response models. Paper presented at the International Meeting of the Psychometric Society, Hong Kong.
- 2011 (July) Tang, Y., Myung, J., Edwards, M.C., & Pitt, M. Computerized adaptive testing and adaptive experimental design. Paper presented at the annual meeting of the Society for Mathematical Psychology, Medford, MA.
- 2010 (Aug)
Invited Edwards, M.C. *Psychometric analysis of the Anger Disorder Scale using latent variable models*. Paper presented at the annual meeting of the American Psychological Association, San Diego, CA.

- 2010 (July) Edwards, M.C. *Minimum detectable change in an IRT framework*. Paper presented at the International Meeting of the Psychometric Society, Athens, GA.
- 2010 (July) Lee, C-T., Zhang, G., & Edwards, M.C. *Standard error of exploratory factor analysis with ordinal variables*. Paper presented at the International Meeting of the Psychometric Society, Athens, GA.
- 2010 (June)
Invited Edwards, M.C., & Wirth, R.J. *Valid measurement without factorial invariance: A longitudinal example*. Paper presented at the 2010 Advances in Longitudinal Methods in the Social and Behavioral Sciences Conference, College Park, MD.
- 2009 (Aug) Edwards, M.C., & Wirth, R.J. *Constructive non-invariance: Sometimes things are supposed to be different*. Paper presented at the annual meeting of the American Psychological Association, Toronto, Canada.
- 2009 (May)
Invited Edwards, M.C. *Potential applications for multidimensional item response models*. Paper presented at the annual meeting of the Association for Psychological Science, San Francisco, CA.
- 2008 (Nov) White, R.J., Edwards, M.C., & Nygren, T.E. *Development and validation of the decision making styles inventory*. Paper presented at the annual meeting of the Society for Judgment and Decision Making, Chicago, IL.
- 2008 (Aug) Edwards, M.C. *At the crossroads of psychometrics and ethics*. Paper presented at the annual meeting of the American Psychological Association, Boston, MA.
- 2008 (July)
Invited Edwards, M.C. *Item factor analysis*. “State of the Art” lecture given at the International Meeting of the Psychometric Society, Durham, NH.
- 2008 (June)
Invited Edwards, M.C. *The current state of quantitative psychology: Dude, where’s my field?* Presentation at the inaugural Fordham Council on Applied Psychometrics Conference, New York, NY.
- 2007 (June) Edwards, M.C., & Thissen, D. *Multi-Stage Computerized Adaptive Testing with Uniform Item Exposure*. Paper presented at the GMAC Conference on Computerized Adaptive Testing, Minneapolis, MN.
- 2007 (March) Edwards, M.C. *A Markov chain Monte Carlo approach to confirmatory item factor analysis*. Paper presented at the International Biometric Society Eastern North American Region Meeting, Atlanta, GA.
- 2006 (Oct)
Invited Bollen, K.A., Bauer, D.J., Christ, S.L., & Edwards, M.C. *An overview of structural equation models and recent extensions*. Presentation for the Winemiller Conference on Methodological Developments of Statistics in the Social Sciences, Columbia, MO.
- 2006 (June)
Invited Edwards, M.C. *A Markov chain Monte Carlo approach to confirmatory item factor analysis*. Presentation for the dissertation award at the annual meeting of the Psychometric Society, Montreal, Canada.

- 2006 (April) Vevea, J.L., & Edwards, M.C. *Who can benefit from subscore augmentation?* Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.
- 2005 (Oct) Guess, H., DeWalt, D., Hill, C. D., & Edwards, M. C. *The UNC patient-reported outcomes measurement system research site: News from the field.* Panel presentation at the University of North Carolina Program on Health Outcomes Pfizer Seminar Series, Chapel Hill, NC.
- 2005 (Oct) Edwards, M.C., Hill, C.D., Langer, M.M., Wirth, R.J., Thissen, D., Varni, J.W., & Burwinkle, T.M. *Lessons Learned from Confirmatory Factor Analysis of the PedsQL™ 4.0 Generic Core Scales.* Presentation at the annual meeting of the International Society for Quality of Life Research, San Francisco, CA.
- 2005 (Oct) Hill, C.D., Edwards, M.C., Langer, M.M., Wirth, R.J., Thissen, D., Varni, J.W., & Burwinkle, T.M. *Lessons Learned using Item Response Theory to Examine the PedsQL™ 4.0 Generic Core Scales.* Presentation at the annual meeting of the International Society for Quality of Life Research, San Francisco, CA.
- 2005 (Aug) Edwards, M.C. *Finding and Defining Quantitative Psychology.* Presentation made at the annual meeting of the American Psychological Association, Washington, D.C.
- 2005 (April) Thissen, D., & Edwards, M.C. *Diagnostic scores augmented using multidimensional item response theory.* Paper presented at the annual meeting of the National Council on Measurement in Education, Montreal, Canada.
- 2005 (March) Edwards, M.C., Hill, C., Langer, M., Thissen, D., Wirth, R.J., Varni, J., & Burwinkle, T. *Using item response theory to examine the PEDSQL 4.0 Generic Core scales.* Presentation for the PROMIS Steering Committee Meeting, Durham, NC.
- 2004 (Oct) Edwards, M.C. *A Markov chain Monte Carlo approach to item factor analysis.* Paper presented at the annual meeting of the Society of Multivariate Experimental Psychology, Naples, FL.
- 2004 (June) Edwards, M.C., & Thissen, D. *Defining and finding optimal designs for uMFS CATs.* Paper presented at the annual meeting of the Psychometric Society, Monterey, CA.
- 2004 (April) Edwards, M.C. *Multi-stage computerized adaptive testing: Using item response theory for design selection.* Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- 2002 (June) Edwards, M.C. *Augmenting IRT scale scores: A Monte Carlo evaluation of an empirical Bayes approach to subscore augmentation.* Presentation made at the North America meeting of the Psychometric Society, Chapel Hill, NC.

Posters

- 2019 (Feb) Wiezel, A., Shiota, M.N., & Edwards, M.C. The dimensionality of political attitudes: A factor-analytic assessment of the 2012 ANES data. Poster to be presented at the annual meeting of the Society for Personality and Social Psychology. Portland, OR.

- 2018 (Aug) Manapat, P.D., & Edwards, M.C. When assuming normality fails under the 2-parameter logistic model. Poster presented at the annual meeting of the American Psychological Association. San Francisco, CA.
- 2015 (Oct) Wexler, R.K., Lehman, J.S., Bodine, A.J., Sun, Y., & Edwards, M.C. Development and initial validation for the Patient-Centered Medical Home Satisfaction Survey (PCMHSS). Poster presented at the Annual Meeting of the North American Primary Care Research Group. Cancun, Mexico.
- 2014 (July) Sun, Y., & Edwards, M.C. *Comparison of estimation bias in factor analysis using Bayesian and frequentist approaches*. Poster presented at the International Meeting of the Psychometric Society. Madison, WI.
- 2014 (July) Keum, E., & Edwards, M.C. *Exploring simpler alternatives to the 3-parameter logistic model for operational use*. Poster presented at the International Meeting of the Psychometric Society. Madison, WI.
- 2011 (Nov) Ing, P.G., Rim, H.B., Nygren, T.E., & Edwards, M.C. *An item response theory investigation of cross-cultural and individual differences in decision making styles*. Poster presented at the Annual Meeting of the Society for Judgment and Decision Making, Seattle, WA.
- 2010 (July) Houts, C.R., & Edwards, M.C. *The performance of local dependence measures with psychological data*. Poster presented at the International Meeting of the Psychometric Society, Athens, GA.
- 2009 (Feb) Kudel, I., Edwards, M.C., Tsevat, J., & VACS Aging Cohort Study Team. *A method of preparing the physical component scale of the SF-12 for IRT analysis*. Poster presented at the annual meeting of the Department of Veterans Affairs Health Services Research and Development, Baltimore, MD.
- 2008 (Oct) Stevens, J., Wang, W., Fan, L., Edwards, M.C., Campo, J.V., & Gardner, W. *Parental attitudes towards pediatric antidepressant use and psychotherapy*. Poster presented at the annual meeting of the American Academy of Child & Adolescent Psychiatry, Chicago, IL.
- 2008 (Oct) Mielenz, T.J., Edwards, M.C., DeVellis, R.F., & Callahan, L.F. *Item Response Theory Analysis of 2 Self-efficacy for Arthritis Scales from Community-based Physical Activity Programs in People with Arthritis*. Poster presented at the annual meeting of the American College of Rheumatology, San Francisco, CA.
- 2008 (Oct) Mielenz, T.J., Edwards, M.C., DeVellis, R.F., & Callahan, L.F. *IRT Analysis of 2 Self-efficacy for Exercise Behavior Scales in People with Arthritis*. Poster presented at the annual meeting of the American College of Rheumatology, San Francisco, CA.
- 2008 (Oct) Mielenz, T.J., Edwards, M.C., Jackman, A.M., & Carey, T.S. *Item Response Theory on the Modified Roland-Morris Disability Questionnaire in a population-based study*. Poster presented at the annual Meeting of the American College of Rheumatology, San Francisco, CA.

- 2008 (Sept) Kudel, I., Edwards, M. C., Tsevat, J., & VACS Aging Cohort Study Team. *Using the Nominal Model to Correct for Violations of Local Independence*. Poster presented at the International Conference on Outcomes Measurement, Bethesda, MD.
- 2008 (May) Lecavalier, L., Gadow, K.D., DeVincent, C.J., & Edwards, M.C. *Psychiatric symptoms in school age children with autism spectrum disorders*. Poster presentation at the International Meeting for Autism Research, London, England.
- 2008 (March) Kudel, I., Edwards, M.C., & Tsevat, J. *Determining response category order using the nominal model: A demonstration with an item from the RASH*. Poster presented at the 2nd PROMIS Conference, Bethesda, MD.
- 2006 (Nov) Edwards, M.C. *Moving beyond summed scores*. Poster presented at the American Invited Psychological Association Science Leadership Conference, Washington, DC.
- 2006 (April) Mielenz, T.J., Edwards, M.C., & Callahan, L.F. *Item response theory analysis of the Tampa Scale of Kinesiophobia in people with arthritis*. Poster presented at the International Congress on Physical Activity and Public Health, Atlanta, GA.
- 2004 (July) Edwards, M.C., Wirth, R.J., & Curran, P.J. *Measurement issues in multilevel models*. Poster presented at the annual meeting of the American Psychological Association, Honolulu, HI.
- 2004 (July) Wirth, R.J., Edwards, M.C., & Curran, P.J. *Latent growth modeling with multiple dichotomous indicators: Testing measurement invariance*. Poster presented at the annual meeting of the American Psychological Association, Honolulu, HI.
- 2004 (June) Wirth, R.J., Edwards, M.C., Curran, P.J., & Hussong, A.M. *Categorical measurement models for the analysis of individual growth: Comparing three analytic approaches*. Poster session presented at the International Summer Institute on Developmental Science, Jyväskylä, Finland

Software

- 2007 Edwards, M.C. *MultiNorm: Multidimensional Normal Ogive Item Response Models*.
- 2005 Thissen, D., & Edwards, M.C. *uMFS: Optimization for uniform multi-form structures*.
- 2002 Vevea, J.L., Edwards, M.C., & Thissen, D. *User's Guide for Augment v2: Empirical Bayes subscore augmentation software*. Electronic Research Memorandum 2002-2, L.L. Thurstone Psychometric Laboratory, Chapel Hill, NC.

Graduate Students

- Carrie R. Houts PhD, 2011, Director of Psychometrics at Vector Psychometric Group
- Pamela G. Ing PhD, 2012, Senior Psychometrician at PSI Testing
- Andrew J. Bodine PhD, 2015, Psychometrician/Statistician at Shirley Ryan AbilityLab
- Yinghao Sun PhD, 2015, Quantitative Analyst at Google
- EunHee Keum PhD, 2016, Senior Public Administration Analyst, CRESST/UCLA
- Leanne M. Stanley PhD, 2017, Consulting Research Statistician, Institutional Research and Planning, The Ohio State University
- Oscar Gonzalez PhD, 2018, Assistant Professor at University of North Carolina at Chapel Hill
- Patrick Manapat PhD, 2021 (Anticipated)
- Molly Gardner PhD, 2025 (Anticipated)

Reviewing

Associate Editor	Multivariate Behavioral Research (2017-present)
Editorial Boards	Psychological Methods (2009-present) Archives of Scientific Psychology (2012-present) Quality of Life Research (2016-present) Educational and Psychological Measurement (2018-present) American Psychologist (2018-present)
Ad-hoc Reviewer	Abnormal Psychology, American Educational Research Journal, American Journal on Intellectual and Developmental Disabilities, American Psychologist, Applied Psychological Measurement, Air Force Office of Scientific Research, Bayesian Analysis, British Journal of Mathematical and Statistical Psychology, Computational Statistics and Data Analysis, Educational Assessment, International Journal of Testing, Journal of Abnormal Psychology, Journal of Clinical Child and Adolescent Psychology, Journal of Clinical Psychology, Journal of Consumer Affairs, Journal of Educational and Behavioral Statistics, Journal of Experimental Social Psychology, Journal of Mathematical Psychology, Journal of Psychopathology and Behavioral Assessment, Journal of the Royal Statistical Society, Journal of Statistical Software, Journal of Survey Statistics and Methodology, National Science Foundation (MMS), Nicotine & Tobacco Research, PLoS ONE, Psychological Assessment, Psychological Medicine, Psychological Reports, Psychometrika, Psycho-Oncology, Research and Human Development, Respiriology, Statistical Methods in Medical Research, Stemmler Research Fund, Structural Equation Modeling

Courses Taught

Quantitative and Statistical Methods in Psychology (Undergraduate)
Testing in Modern Society (Undergraduate)
Item Response Theory (Graduate)
Regression (Graduate)
Psychometrics (Graduate)
Factor Analysis (Graduate)
Multivariate Statistics (Graduate)

Awards and Appointments

2016	Alumni Award for Distinguished Teaching, The Ohio State University
2016	OSU Arts and Sciences IT Governance Committee – Member
2015 – 2016	OSU Arts and Sciences College Faculty Advisory Council – Elected Member
2015 – 2016	Affiliated Faculty, Translational Data Analytics @ Ohio State
2014 – 2016	Roger E. Kirk Scholar in Residence – Department of Psychology, OSU
2012 – 2015	Psychometric Oversight Committee, The American Institute of Certified Public Accountants – Member
2012 – 2013	Digital Testing Psychometric Advisory Team, The College Board – Chair
2012 – 2016	OSU Social and Behavioral Sciences IRB – Chair
2012 – 2016	OSU IRB Policy Committee – Member
2012 – 2013	Visiting Scholar in Residence – The College Board
2012	Elected to membership in Society of Multivariate Experimental Psychology
2011 – 2016	Associate Editor, <i>The Score</i> , APA Division 5 newsletter
2011	2010 Fred Brown Research Award – Department of Psychology, OSU
2010 – 2011	Quantitative Area Chair - Department of Psychology, OSU

2009 – 2011	APA Committee on Early Career Psychologists – Science Representative
2008 – 2009	APA Division 5 Membership Committee – Chair
2007 – 2008	Statistics Working Group for the APA <i>Publication Manual</i> – Member
2007 – 2008	APA Division 5 Membership Committee – Member
2006 – 2012	OSU Social and Behavioral Sciences IRB – Member
2006 – 2007	APA Task Force for Increasing the Number of Quantitative Psychologists – Member
2006	Psychometric Society Dissertation Award
2005	Baughman Dissertation Award, Department of Psychology - UNC Chapel Hill, NC
2003	Lyle V. Jones Graduate Student Excellence Award - UNC Chapel Hill, NC

Funding (Ongoing)

2019 – 2023 Subcontract PI	Measuring sleep problems in children with Autism Spectrum Disorder. <i>NIH</i> .
2018 – 2023 Co-I	Variations in hormones during menopause: Effects on cognitive and brain aging. <i>NIH</i> .
2018 – 2023 Subcontract PI	Total Engagement and Activation Measure (TEAM): Developing a measure of the capacity of patients to engage in their healthcare. <i>NIH</i> .
2018 – 2021 Co-I	Pilot trial of adaptive therapy for late stage breast cancer. <i>Arizona Biomedical Research Commission</i>

Funding (Completed)

2015 – 2018 Consultant	Implementation of evidence-based preventive parenting programs. <i>NIDA</i> .
2015 – 2017 Consultant	Applying multidimensional item response theory models to generate an interconnected bank of items for earth system science. <i>NSF</i> .
2012 – 2017 Co-I	Toward Outcome Measurement of Anxiety in Youth with Autism Spectrum Disorders. <i>NIH</i> .
2013 – 2015 Consultant	Teenage Stimulant Use: Neurally Plausible Spontaneous and Reflective Processes. <i>NIDA</i> .
2012 – 2014 Co-I	Development and Validation of a Measure to Assess Satisfaction with the Patient Centered Medical Home. <i>American Academy of Family Physicians Foundation</i> .
2010 – 2013 Consultant	PROMIS Pediatrics: Longitudinal Validation and Linking Pediatric and Adult Item Banks. <i>NIH</i> .
2009 – 2014 Consultant	The Ohio State University Center for Clinical and Translational Science. <i>NIH/DHHS</i> .
2008 – 2009 Consultant	Comparing Different Methods of Collecting Self-report Data in Veterans. <i>VA Healthcare System of Ohio</i> .
2008 – 2009 Consultant	Aging, Stress, Fatty Acids, and Inflammation. <i>NIH/NIA</i> .
2007 – 2009 PI	Assessing the Impact of Item Type on Dimensionality: An Application of Confirmatory Item Factor Analysis. <i>College Board</i> .
2007 – 2008 Consultant	Improving Cardiovascular Care for Minority Americans: Facilitating Organizational Change. <i>Robert Wood Johnson Foundation</i> .
2007 – 2009 Consultant	Self-efficacy in Arthritis: Modern Measurement Theory and Qualitative Item Review. <i>American College of Rheumatology</i> .
2005 – 2008 Consultant	Item Response Theory Analysis of 2 HRQOL Measures in Arthritis. <i>Arthritis Foundation</i> .