

Michael C. Edwards

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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

Professional History

- 2006 - Present Assistant Professor, Psychology (Quantitative)
 The Ohio State University

Publications

- In Press Bollen, K.A., Bauer, D.J., Christ, S.L., & Edwards, M.C. An overview of structural equation models and recent extensions. In S. Kolenikov, D. Steinley, and L. Thombs (Eds.), *Statistics in the social sciences: Current methodological developments*. Hoboken, NJ: Wiley.
- In Press Lecavalier, L., Gadow, K.D., DeVincent, C.J., Houts, R., & Edwards, M.C. Deconstructing the PDD clinical phenotype: Internal validity of the DSM-IV. *Journal of Child Psychology and Psychiatry*
- In Press Mielenz, T.J., Edwards, M.C., & Callahan, L.F. Item response theory analysis of the Tampa Scale for Kinesiophobia in people with arthritis. *Journal of Clinical Epidemiology*.
- 2009 Edwards, M.C. An introduction to item response theory using the Need for Cognition Scale. *Social and Personality Psychology Compass*, 3, 507-529.
- 2009 Edwards, M.C., & Edelen, M.O. Special topics in item response theory. In R. Millsap and A. Maydeu-Olivares (Eds.), *Handbook of quantitative methods in psychology* (p.178-198). New York, NY: Sage Publications.
- 2009 Edwards, M.C., & Wirth, R.J. Measurement and the study of change. *Research in Human Development*, 6, 74-96.

- 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.
- 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.
- 2008 Flora, D.B., Curran, P.J., Hussong, A.M., & Edwards, M.C. Incorporating measurement non-equivalence in a cross-study latent growth curve analysis. *Structural Equation Modeling: A Multidisciplinary Journal*, 15, 676-704.
- 2008 Woods, C.M., & Edwards, M.C. Factor analysis and related methods. In C. R. Rao, J. Philip Miller, & D. C. Rao (Eds.), *Epidemiology and Medical Statistics* (p.367-394). New York, NY: Elsevier.
- 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 outcomes in young adults: Is stress a mediating variable? *Personality and Individual Differences*, 42, 135-144.
- 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. Little, J. Bovaird, & N. Card (Eds.), *Modeling ecological and contextual effects in longitudinal studies of human development* (p.89-120). Mahwah, NJ: LEA.
- 2007 Edwards, M.C., & Thissen, D. Exploring potential designs for multi-form structure computerized adaptive tests with uniform item exposure. In D. J. Weiss (Ed.), *Proceedings of the 2007 GMAC Conference on Computerized Adaptive Testing*. Retrieved 8.12.08 from www.psych.umn.edu/psylabs/CATCentral/
- 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., Zucker, R.A., & Chassin, L.A. Externalizing symptoms among children of alcoholic parents: Entry points for an antisocial pathway to alcoholism. *Journal of Abnormal Psychology*, 116, 529-542.
- 2007 Wirth, R.J., & Edwards, M.C. Item factor analysis: Current approaches and future directions. *Psychological Methods*, 12, 58-79.
- 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., Ebener, P., Edwards, M.C., & Mandell, W. The Dimensions of Change in Therapeutic Community Treatment Instrument. *Psychological Assessment*, 18, 118-122.

Manuscripts Under Review or Being Revised for Resubmission

Edwards, M.C. A Markov chain Monte Carlo approach to confirmatory item factor analysis.

Edwards, M.C., Flora, D.B., & Thissen, D. Multistage computerized adaptive testing with uniform item exposure.

Presentations

2009 (August)

Edwards, M.C., & Wirth, R.J. *Constructive non-invariance: Sometimes things are supposed to be different*. Paper to be 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 (November)

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 (August)

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?* Address given 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 (October)

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 (October) 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 (October) 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 (October) 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 (August) 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 (October) 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 Psychometric Society Meeting, 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

- 2009 (February) 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 to be presented at the annual meeting of the Department of Veterans Affairs Health Services Research and Development, Baltimore, MD.
- 2008 (October) 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 (October) 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 (October) 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 (October) 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 (September) 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 (November) Edwards, M.C. *Moving beyond summed scores*. Poster presented at the American Psychological Association Science Leadership Conference, Washington, DC.
Invited
- 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.

Reviewing

Editorial Board Psychological Methods
Ad-hoc Reviewer American Psychologist, Applied Psychological Measurement, Air Force Office of Scientific Research, Journal of Educational and Behavioral Statistics, Journal of Experimental Social Psychology, Journal of Mathematical Psychology, Multivariate Behavioral Research, National Science Foundation, Psychological Assessment, Psychological Medicine, Psychometrika, Quality of Life Research, Respiriology

Awards and Appointments

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 *Publication Manual* – Member
2007 – 2008 APA Division 5 Membership Committee – Member
2007 APA Science Leadership Conference – Participant
2006 Psychometric Society Dissertation Award
2006 APA Science Leadership Conference – Participant
2006 – 2007 APA Task Force for Increasing the Number of Quantitative Psychologists - Member
2005 Baughman Dissertation Award, Department of Psychology – UNC Chapel Hill, NC
2003 Lyle V. Jones Graduate Student Excellence Award
L.L. Thurstone Psychometric Laboratory – Chapel Hill, NC

Funding

2009 – 2014 The Ohio State University Center for Clinical and Translational Science
Role: Consultant *Grant from the NIH/DHHS.*
2008 – 2009 Comparing Different Methods of Collecting Self-report Data in Veterans.
Role: Consultant *VA Healthcare System of Ohio.*
2008 – 2009 Aging, Stress, Fatty Acids, and Inflammation.
Role: Consultant *Grant from the NIH/NIA.*
2007 – 2009 Assessing the Impact of Item Type on Dimensionality: An Application of Confirmatory
Role: PI Item Factor Analysis. *Contract with the College Board, \$151,000.*
2007 – 2008 Improving Cardiovascular Care for Minority Americans: Facilitating Organizational
Role: Consultant Change. *Grant from the Robert Wood Johnson Foundation.*
2007 – 2009 Self-efficacy in Arthritis: Modern Measurement Theory and Qualitative Item Review.
Role: Consultant *Grant from the American College of Rheumatology.*
2005 – 2008 Item Response Theory Analysis of 2 HRQOL Measures in Arthritis. *Grant from the*
Role: Consultant *Arthritis Foundation.*

Courses Taught

Psychology 321 Quantitative and Statistical Methods in Psychology (Undergraduate)
Psychology 597.02 Testing in Modern Society (Undergraduate)
Psychology 821 Fundamentals of Item Response Theory (Graduate)

Professional Organizations

2004 – Present American Statistical Association, Member
2003 – Present National Council on Measurement in Education, Member
2002 – Present American Educational Research Association, Member
2001 – Present American Psychological Association & Division 5, Member
2001 – Present Psychometric Society, Member