

## Curriculum Vitae

**Name:** Stephen Schilling

### Professional Address

The Institute for Social Research  
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### Google Scholar

<https://scholar.google.com/citations?hl=en&user=OMpk2GgAAAAJ>

### Educational History

B.S. in Human Development and Family Studies from Cornell University, 1981.

M.S. in Statistics from The University of Chicago, 1993.

Thesis: Estimating Ratios of Normalizing Constants in Full Information Item Factor Analysis.

Ph.D. in Research Methodology and Quantitative Psychology from The University of Chicago, 1993. Dissertation: Advances in Full Information Item Factor Analysis using the Gibbs Sampler.

### Professional History

Program Analyst - Department of Psychiatry, University of Chicago Medical Center, 1982-1985

Research Analyst - Methodology Research Center, NORC, The University of Chicago, 1985-1993.

Assistant Professor - Department of Psychology and Human Development Peabody College  
Vanderbilt University, 1995-1999

Assistant Professor – School of Education, The University of Michigan, 1999 - 2005

Research Associate – School of Education, The University of Michigan, 2005 - 2007

Assistant Research Scientist – School of Education, The University of Michigan, 2007 - 2015

Psychometrician – English Language Institute, The University of Michigan, 2008 –2012

Assistant Research Scientist – Institute for Social Research, The University of Michigan, 2010 –

2015

Associate Research Scientist – School of Education, The University of Michigan, 2015 – Present

Associate Research Scientist – Institute for Social Research, The University of Michigan, 2015 - Present

### Publications

(See also my Google Scholar Webpage - <https://scholar.google.com/citations?user=OMpk2GgAAAAJ&hl=en>)

Schilling, S., Kaufman, E.J., Schryver, J.C., D'Amico, A.D. (1985). The Application of Performance Feedback in Simulator Training: Its Effects on the Acquisition of Shiphandling Skills in Unfamiliar Waterways. *NATIONAL MARITIME RESEARCH CENTER KINGS POINT NY COMPUTER AIDED OPERATIONS RESEARCH FACILITY*. NATIONAL MARITIME RESEARCH CENTER KINGS POINT NY

Meng, X.L. & Schilling, S.G.\* (1996) Fitting FIIF Models and an Empirical Investigation of Bridge Sampling. *Journal of the American Statistical Association*, 91, 1254-1267.

Bock, R.D & Schilling, S.G. (1997) High-Dimensional Full-Information Item Factor Analysis. In Berkane, M. (Ed.) *Latent Variable Modeling and Applications to Causality*. New York: Springer-Verlag.

Bickman, L., Heflinger, C.A., Northrup, D., Sonnichsen, S., & Schilling, S. (1998). Long Term Outcomes to Family Caregiver Empowerment. *The Journal of Child and Family Studies*, 7 (3), 269-282.

Bickman, L., Lambert, E.W., and Schilling, S.G. (1999). Time Patterns of Mental Health Outcomes. *Mental Health Services Research*. 1(2), 67-82.

Leonelli, B.T., Chang, C.H., Schilling, S. G. & Bock, R.D. (2000). A Full-Information Item Factor Analysis Interpretation of the MMPI-2: Normative Sampling with Non-Pathonomic Descriptors. *Journal of Personality Assessment*. 74(3).

Schilling, S.G. & Hogge, J.H. (1997). Generalizability Theory and the Lens Model Equation. *The Brunswick Society Newsletter*, 12(1).

Hogge, J.H., & Schilling, S.G. (2001). Assessing the Reliability of Judgments. In K.R. Hammond & T.S. Stewart (Eds.) *The Essential Brunswick: Beginnings, Explications, Applications* (pp. 411-415). New York: Oxford University Press.

Schilling, S.G. & Hogge, J.H. (2001). Hierarchical Linear Models for the Nomothetic Aggregation of Ideographic Descriptions of Judgment. In K.R. Hammond & T.S. Stewart (Eds.) *The Essential Brunswick: Beginnings, Explications, Applications* (pp. 332-341). New York: Oxford University Press.

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\* Authorship determined alphabetically.

- Meng, X.L. & Schilling, S.G.\* (2002) Warp Bridge Sampling. *Journal of Computational and Graphical Statistics*. 11(3) 552-586.
- Hill, H. C., Schilling, S. G., & Ball, D. L. (2004). Developing Measures of Teachers' Mathematics Knowledge for Teaching. *Elementary School Journal*. 105(1) 11-30
- Phelps, G. & Schilling, S. G. (2004). Developing Measures of the Subject Matter Knowledge that it takes to Teach Reading. *Elementary School Journal*. 105(1) 31-48.
- Schilling, S. G. (2004). Conceptualizing the Validity Argument: an Alternative Approach. *Measurement: Interdisciplinary Research and Perspectives*. 2(3) 78-82.
- Schilling, S. G. & Bock (2005). High-Dimensional Maximum Marginal Likelihood Item Factor Analysis by Adaptive Quadrature. *Psychometrika*. 70(3) 533-555.
- Schilling, S., Carlisle, J.F., Zeng, J. & Scott, S. (2007). Are fluency measures accurate predictors of reading achievement? *Elementary School Journal*. 107(5). 429-448.
- Schilling, S.G. & Hill, H.C. (2007). Assessing Measures of Mathematical Knowledge for Teaching: A Validity Argument Approach. *Measurement: Interdisciplinary Research and Perspectives*. 5(2-3) 70-80.
- Schilling, S. G. (2007). The Role of Psychometric Modeling in Test Validation: an Application of Multidimensional Item Response Theory. *Measurement: Interdisciplinary Research and Perspectives*. 5(2-3) 93-106.
- Schilling, S.G. Blunk, M. & Hill, H.C. (2007). Test Validation and the MKT Measures: Generalizations and Conclusions. *Measurement: Interdisciplinary Research and Perspectives*. 5(2-3) 118-130.
- Schilling, S. G. (2007). Generalizability and Specificity of Interpretive Arguments: Observations Inspired by the Commentaries. *Measurement: Interdisciplinary Research and Perspectives*. 5(2-3) 211-216.
- Delaney, S., Ball, D. L., Hill, H. C., Schilling, S. G., & Zopt, D. (2008). Mathematical Knowledge for Teaching: Adapting U.S. Measures for Use in Ireland.. *Journal of Mathematics Teacher Education*. 11(3) 171-197.
- Hill, H. C., Ball, D.L., & Schilling, S.G. (2008)., Conceptualizing and Measuring Teachers' Topic Specific Knowledge of Students. *Journal for Research in Mathematics Education*, 39(4) 372-400.
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- Hill, H. C., Ball, D. L., & Schilling, S. G. (2008). Unpacking pedagogical content knowledge: Conceptualizing and measuring teachers' topic-specific knowledge of students. *Journal for Research in Mathematics Education*. 39(4) 372-400.
- Williams, D.A. & Schilling, S. (2009). Advances in the assessment of Fibromyalgia. *Rheumatic Disease Clinics of North America*, 35;339-357. **PMCID: PMC2721827**
- Williams, DA, Schilling, S, Shibata, KN, Zwinck, L, Matallana, L, Arnold, LM. (2009). Relevance of PROMIS item banks to individuals with fibromyalgia. *Arthritis and Rheumatism*, 60(10);S1404.
- Schilling, S., Blum, S, Tourkodimitris, S, Stankus, A, Williams, DA. (2010). Developing an improved PROMIS fatigue short-form for use in patients with fibromyalgia. *Arthritis and Rheumatism*, 62 (10 supplement);S334.
- Kratz, A.L., Schilling, S.G., Goesling, J., & Williams, D.A. (2015). Development and Initial Validation of a Brief Self-Report Measure of Cognitive Dysfunction in Fibromyalgia. *Journal of Pain* 16(6): 527-536.
- Kratz, A.L., Schilling, S., Williams, D.A. (2016) The PROMIS Fatigue FM Profile: A self-report measure of fatigue for use in fibromyalgia. *Quality of Life Research* 25(7):1803-13.
- Carlozzi N.E., Downing N.R., McCormack M.K., Schilling S,G, Perlmutter J.S., Hahn E.A., Lai, Frank S, Quaid KA, Paulsen JS, Cella D, Goodnight SM, Miner JA, Nance MA. (2016). New measures to capture end of life concerns in Huntington disease: Meaning and Purpose and Concern with Death and Dying from HDQLIFE (a patient-reported outcomes measurement system). *Quality of Life Research* 25(10):2403-2415.
- Carlozzi, N.E., Schilling, S.G., Lai, J.S., Perlmutter, J.S., Nance, M.A., Waljee, J.F, Miner, J.A, Barton, S.K, Goodnight, S.M. & Dayalu, P. (2016). HDQLIFE: the development of two new computer adaptive tests for use in Huntington disease, speech difficulties and swallowing difficulties. *Quality of Life Research* 25(10), 2417-2427.
- Carlozzi, N.E., Downing, N.R. Schilling, S.G., Lai, J.S., Goodnight, S.M., Miner, Frank, S.A. (2016). The development of a new computer adaptive test to evaluate chorea in Huntington disease: HDQLIFE Chorea. *Quality of Life Research* 25(10),2429-2439.
- Carlozzi, N.E., Schilling, S.G., Lai, J.S. & 23 others. (2016). HDQLIFE: development and assessment of health-related quality of life in Huntington disease (HD). *Quality of Life Research* 25(10):2441-2445. 23 citations.
- Carlozzi NE, Ready RE, Frank S, Cella D., Hahn E.A., Goodnight S.M., Schilling S.G., Boileau N.R.,Dayalu P. (2017). Patient-reported outcomes in Huntington's disease: Quality of life in neurological disorders (Neuro-QoL) and Huntington's disease health-related quality of life (HDQLIFE) physical function measures. *Movement Disorders* 32(7), 1096-1102.

- Carlozzi N.E., Hahn E.A., Goodnight S.M., Kratz A.L., Paulsen J.S., Stout J.C., Frank S., Miner J.A., Cella D., Gershon R.C., Schilling S.G., & Ready R.E. (2018). Patient-reported outcome measures in Huntington disease: quality of life in neurological disorders (Neuro-QoL) social functioning measures. *Psychological Assessment* 30(4), 450-458.
- Carlozzi NE, Hahn EA, Frank S. A., Perlmutter, J.S., Downing, N.D., McCormack, M.K., Barton, S., Nance., M.A., & Schilling S.G. (2018). A new measure for end of life planning, preparation, and preferences in Huntington disease: HDQLIFE end of life planning. *Journal of Neurology*. 265(1), 98–107.
- Carlozzi, N.E., Schilling, S., Kratz, A.L., Paulsen, J.S., Frank, S., & Stout J.C. (2018). Understanding patient-reported outcome measures in Huntington disease: At what point is cognitive impairment related to poor measurement reliability? *Quality of Life Research* 27(10), 2541-2555.
- Carlozzi, N.E., Schilling, S., Freedman, J., Kalpakjian, C.Z., & Kratz, A.L. (2018). The reliability of end of day and ecological momentary assessments of pain and pain interference in individuals with spinal cord injury. *Quality of Life Research* 27(11), 3003-3012.
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- Smith, S., Kennel, M., Schilling, S., Kalpakjian, C., & Kratz, A.L. (2019). The association of performance status and disease severity in patients with chronic graft-vs-host disease. *Archives of Physical Medicine and Rehabilitation* 100(4), 606-612.
- Fox, M.A., Ayyangar R., Parten, R., Haapala, H.J., Schilling, S.G., & Kalpakjian, C.Z. (2019). Self-report of pain in young people and adults with spastic cerebral palsy: interrater reliability of the revised Face, Legs, Activity, Cry, and Consolability (r-FLACC) scale ratings. *Developmental Medicine & Child Neurology* 61, 69–74.
- Lajiness-O'Neill, R., Brooks J., Lukomski, A., Schilling, S., Huth-Bocks, A., Warschausky, S., Flores, A.M., Swick, C., Nyman, T., Andersen, T., Morris, N., Schmitt, T.A., Bell-Smith, J., Moir, B., Hodges, E.K., & Lyddy, J.E. (2019). Development and validation of PediaTrac™: A web-based tool to track developing infants. *Infant Behavior and Development*, 50, 224-237.
- Reighard, S., Wizov, S., Schilling, S., Spaeth, G., Stein, J., Shroff, S., Ehrlich, J., Robin, A., Pillai, M., & Raja, V. (2019). Glaucoma-Associated Visual Task Performance and Vision-Related Quality of Life in South India. *Ophthalmology Glaucoma*. (In Press).

## Statistical Software

Wood, R., Wilson, D., Gibbons, R., Schilling, S.G., Muraki, E., & Bock, R.D. (2004). *TESTFACT IV*. Lincolnwood, IL: Scientific Software International.

## Grants

**Faster Mixing Markov Chain Monte Carlo for Multidimensional IRT and Cognitive Diagnosis Models.** National Science Foundation. \$132,875. Stephen Schilling, principal investigator. Yves Achade & Robert Henson, co-investigators.

**Measuring Mathematical Knowledge for Teaching Using Computerized Adaptive Testing.** National Science Foundation. \$711,442. Stephen Schilling, principal investigator

**A Fibromyalgia-Specific Extension of the PROMIS (Patient-Reported Outcomes Measurement Information System) Network.** National Institute of Health. \$588,057. David Williams principal investigator. Stephen Schilling, co-investigator.

**Developing *Contrastive Analysis* for Teaching Academic Classroom English to Young African American English Speaking Students.** Institute of Educational Sciences. \$1,200,000. Holly K. Craig, principal investigator. Stephen G. Schilling, co-investigator.

## Technical Reports

Bock, R. D., Sykes, R. C., & Schilling, S. G. (1987). CAP Reading Comprehension Skill expressed in units of the Degrees of Reading Power test (Technical Report to the California Assessment Program). Chicago: NORC

Schilling, S. G., & Bock, R. D. (1988). California assessment program: report on the item analysis, calibration, and scoring of the 1987-1988 grade 12 assessment. (Technical Report to the California Assessment Program). Chicago: NORC

Carlisle, J.F., Schilling, S.G. Scott, S. & Zeng, J. (2003). Evaluation of Michigan's Reading First Program: Year 1. (Technical Report to the U.S. Department of Education). Ann Arbor: University of Michigan.

Carlisle, J.F., Cortina, K., Zeng, J., & Schilling, S.G. (2006). *Gains in Reading Achievement Over Two Years in Michigan's Reading First Schools*. Technical Report #3.1, Evaluation of Reading First in Michigan. Ann Arbor: University of Michigan.

- Carlisle, J.F., Schilling, S.G., Zeng, J., Cortina, K.S., & Kleyman, Y. (September 2006). *Progress in Reading First in a Michigan School District: A Study of Lansing Elementary Schools*. Technical Report #4.1. Evaluation of Reading First in Michigan. Ann Arbor, MI: University of Michigan.
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- Schilling, S.G. & Williams, D.A. (2012). IRT Analysis of the PROMIS Fatigue Item Bank in fibromyalgia: A technical report for NIAMS/NIH.
- Schilling, S.G. & Williams, D.A. (2012). IRT Analysis of the PROMIS Pain Item Bank in fibromyalgia: A technical report for NIAMS/NIH.
- Schilling, S.G. & Williams, D.A. (2012). IRT Analysis of the PROMIS Sleep/wake Item Banks in fibromyalgia: A technical report for NIAMS/NIH.
- Schilling, S.G. & Williams, D.A. (2012). IRT Analysis of the PROMIS Physical Functioning Item Bank in fibromyalgia: A technical report for NIAMS/NIH.
- Schilling, S.G. & Williams, D.A. (2012). IRT Analysis of the PROMIS Emotional Distress Item Banks in fibromyalgia: A technical report for NIAMS/NIH.
- Schilling, S.G. & Williams, D.A. (2012). IRT Analysis of the PROMIS Cognition Item Banks in fibromyalgia: A technical report for NIAMS/NIH.
- Schilling, S.G. & Perrault, P.G. (2013). Equating Mississippi State Exams with Aligned Instructional Exams under Excellence for All: Interim Report. (Presented to the Mississippi State Department of Education).
- Rowan, B., Schilling, S.G., Spain, A., Bhandari, P., Berger, D., & Graves, J. (2013). Promoting High Quality Teacher Evaluations in Michigan: Lessons from a Pilot of Educator Effectiveness Tools. (Report prepared for the Michigan Council on Educator Effectiveness).
- Schilling, S.G. & Perrault, P.G. (2014). Linking Mississippi's Subject Area Testing Program (SATP2) High School English II to ACT *QualityCore* English 10 Examinations: Interim Report. (Presented to the Mississippi State Department of Education).
- Schilling, S.G. & Perrault, P.G. (2014). Linking Mississippi State SATP2 English II and Biology Exams with 2012-2013 Cambridge IGCSE English First Language and Biology Exams under *Excellence for All*: Interim Report. (Presented to the Mississippi State Department of Education).

Schilling, S.G. & Perrault, P.G. (2014). Linking the Mississippi State SATP2 Algebra I and U.S. History Exams with the 2012-2013 Cambridge IGCSE Mathematics and American History Exams under *Excellence for All*: Interim Report. (Presented to the Mississippi State Department of Education).

Schilling, S.G. & Perrault, P.G. (2014). Equating Arizona's Instrument to Measure Standards (AIMS) in High School Reading, Writing and Mathematics to Cambridge IGCSE and ACT *QualityCore* English and Mathematics End-of-Course Examinations: Interim Report. (Presented to the Arizona State Department of Education).