

## Hong Jiao

1230B Benjamin Building  
Department of Measurement, Statistics, and Evaluation  
University of Maryland  
College Park, MD 20742  
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Office Tel: (301) 405-3627

### EDUCATION

- Ph.D. Measurement, Statistics, and Evaluation, Florida State University, May 2003.
- M.A. Linguistics and Applied Linguistics, Shanghai Jiao Tong University, February 1992.  
*Graduated with honor*
- B.S. English for Science and Technology, Shanghai Jiao Tong University, July 1989.

### PROFESSIONAL EXPERIENCE

- 8/2007–Present University of Maryland, College Park, MD.  
Assistant Professor in Department of Measurement, Statistics, and Evaluation
- 6/2003–8/2007 Harcourt Assessment, Inc., San Antonio, TX.  
Psychometrician II & I in Psychometrics and Research Service
- 6/2002–7/2002 Harcourt Educational Measurement, San Antonio, TX.  
Lenke Psychometric Fellow in Psychometrics and Research Service
- 5/1999–7/2000 Student Assessment, Leon County Schools, Tallahassee, FL.  
Measurement and Statistics Intern
- 1/1999–4/1999 Florida State University, Tallahassee, FL.  
Teaching Assistant of College Mathematics in Department of Mathematics
- 2/1992–7/1998 Shanghai Jiao Tong University, Shanghai, China.  
Lecturer of English and test specialist in Department of Foreign Languages

## **ACADEMIC WORK**

### **Publications**

#### **Book Chapters:**

Jiao, H., Wang, S., Kamata, A. (2007). Modeling local item dependence with the hierarchical generalized linear model. In E. V. Smith & R. M. Smith (ed.), *Rasch Measurement: Advanced and Specialized Applications*. JAM press.

#### **Journal Papers:**

Jiao, H. (2009). Diagnostic Classification Models: Which One Should I Use? *Measurement: Interdisciplinary Research & Perspective*, 7(1), 65-67.

Jiao, H. & Wang, S. (Accepted). A multifaceted approach to investigating the equivalence between CBT and PPT for a large-scale Diagnostic Reading Test. *International Journal of Learning Technology*.

Jiao, H. & Wang, S. (In revision). Investigating the comparability between online and paper-and-pencil versions of large-scale high school exit examinations. *International Journal of Testing*.

Jiao, H., Wang, S., Kamata, A. (2005). Modeling local item dependence with the hierarchical generalized linear model. *Journal of Applied Measurement*, 6(3), 311-321.

Jiao, H. (2004). Evaluating the Dimensionality of the Michigan English Language Assessment Battery. *Spaan Fellow Working Papers in Second or Foreign Language Assessment: Volume 2 (2004)*. University of Michigan, Ann Arbor, MI.

Wang, S., & Jiao, H. (In press). Construct equivalence across grades in a vertical scale for a K-12 large-scale reading assessment. *Educational and Psychological Measurement*.

Wang, S., Jiao, H., Young, M. J., Brooks, T., & Olson, J. (2008). Comparability of computer-based and paper-and-pencil testing in K-12 reading assessments: A meta-analysis of testing mode effects. *Educational and Psychological Measurement*, 68(1), 5-24.

Wang, S., Jiao, H., Young, M. J., Brooks, T., & Olson, J. (2007). The effects of computer-based test versus paper-and-pencil test on K-12 student mathematics tests: a meta-analysis. *Educational and Psychological Measurement*, 67(2), 219-238.

Wang, S., & Jiao, H. (2005). Development and application of the Stanford achievement test, diagnostic test, and English proficiency test. *Testing Research*, 1(1), 118-128.

Selected Conference Presentations

- Jiao, H., Wang, S., & Lu, R. (2009). *Mixture Rasch model for dichotomously scored testlet-based assessments*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, San Diego, CA.
- Jiao, H., & Wang, S., (2009). *The effects of anchor item selection on IRT true score equating with nonequivalent-group anchor-test design*. Paper accepted at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Jiao, H., Wang, S., Wan, L., & Lu, R. (2009). *Investigation of local item dependence in scenario-based science assessments*. Paper accepted at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Lu, R., & Jiao, H. (2009). *Detecting DIF using mixture Rasch model*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, San Diego, CA.
- Wang, S., & Jiao, H. (2009). *Exploring relationship between static and dynamic vertical scaling from cross-section and longitudinal design perspective*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, San Diego, CA.
- Wang, S., & Jiao, H. (2009). *A longitudinal study of achievement gap: Gender and ethnicity difference in reading and mathematics progress*. Paper accepted at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Wang, S., Jiao, H., & Jin, Y. (2009). *Effect of ignoring hierarchical data structures on accuracy of vertical scaling: A mixed-effects Rasch Model approach*. Paper accepted at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Jiao, H., Wang, S., & Binici, S. (2008). *Applications of testlet models in investigation of content clustering in large-scale science assessments*. Paper presented at the Annual Meeting of the Florida Educational Research Association, FL.
- Jiao, H., & Wang, S. (2008). *Construct equivalence for vertically scaled science assessment*. Paper presented at the Annual Meeting of the American Educational Research Association, New York City, NY.
- Jiao, H., Wang, S., & He, W. (2008). *The sensitivity of Yen's  $Q_3$  statistics in detecting local item dependence*. Paper presented at the Annual Meeting of the American Educational Research Association, New York City, NY.
- Jiao, H., Wang, S., & He, W. (2008). *Comparison of estimation methods of one-parameter testlet model*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, New York City, NY.
- Wang, S., & Jiao, H. (2008). *Empirical evidence of construct equivalence of vertical scale*

- across grades in K-12 large-scale standardized reading assessments.* Paper presented at the Annual Meeting of the National Council on Measurement in Education, New York City, NY.
- Wang, S., & Jiao, H. (2008). *Does large-scale standardized test violate the unidimensionality across grades? An empirical study of construct invariance of vertical scale of mathematics test.* Paper presented at the Annual Meeting of the American Educational Research Association, New York City, NY.
- Wang, S., & Jiao, H. (2008). *Validity of accommodated state assessments.* Paper presented at the National Conference of the Large-scale Assessment. Orlando, FL.
- Jiao, H., Wang, S., & Binici, S. (2007). *Investigating the comparability between online and paper-and-pencil versions of large-scale high school exit examinations.* Paper presented at the Annual Meeting of the Florida Educational Research Association, FL.
- Wang, S., Jiao, H., & Young, M. J. (2007). *Effectiveness of using Stanford English Language Proficiency Test to identify English Language Learners.* Paper presented at the Annual Meeting of the Florida Educational Research Association, Tampa, FL.
- Jiao, H., & Wang, S. (2007). *The effects of the selection of vertical linking items on modeling student growth.* Paper presented at the Annual Meeting of the National Council on Measurement in Education, Chicago, IL.
- Jiao, H., & Wang, S. (2007). *The choice of vertical linking items on vertical scaling.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Jiao, H., & Wang, S. (2007). *Validity of assessing limited English proficiency student in state assessment programs.* Paper presented at the National Conference of the Large-scale Assessment. Nashville, TN.
- He, W., Wang, S., & Jiao, H. (2007). *Robustness of the SPRT procedure in CMT when local item independence assumption is violated.* Paper presented at the Annual Meeting of the National Council on Measurement in Education, Chicago, IL.
- Wang, S., Jiao, H., Young, M., Olson, J., & Brooks, T. (2007). *A meta-analysis of testing mode effects in K-12 reading assessments.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Wang, S., & Jiao, H. (2007). *Construct validity and measurement invariance of large-scale standardized reading and mathematics tests under disability and LEP accommodations in K-12 education.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Wang, S., Young, M., Brooks, T., Jiao, H., & Skoglund, G. (2007). *A Comparison of computer-*

- automated and human scoring methods for a large scale state-wide writing assessment in K-12 education.* Paper presented at the Annual Meeting of the National Council on Measurement in Education, Chicago, IL.
- Jiao, H., & Wang, S. (2006). *Comparison of vertical linking designs.* Paper presented at the National Conference of the Large-scale Assessment, San Francisco, CA.
- Jiao, H., Wang, S., Kamata, A., & Miyazaki, Y. (2006). *An investigation of local item dependence using multilevel testlet model.* Paper presented at the Annual Meeting of the National Council on Measurement in Education, San Francisco, CA.
- Jiao, H., Wang, S., Yi, Q., & Vukmirovic, Z. (2006). *The equivalence of the computer-based and paper-and-pencil versions of a large-scale diagnostic reading test.* Paper presented at the Annual Meeting of the American Educational Research Association.
- Jiao, H., Wang, S., & Vukmirovic, Z. (2006). *Investigation of local item dependence in scenario-based science assessment.* Paper presented at the 13<sup>th</sup> International Objective Measurement Workshop, San Francisco, CA.
- Lau, A. C., Jiao, H., & Lam, W. (2006). *A simulation study to compare pattern scoring and number-correct scoring with 3PL-IRT model.* Paper presented at the Annual Meeting of the National Council on Measurement in Education, San Francisco, CA.
- Wang, S., Jiao, H., & Young, M. (2006). *The robustness of unidimensional Rasch Measurement Model to multidimensional data in vertical scaling.* Paper presented at the 13<sup>th</sup> International Objective Measurement Workshop, San Francisco, CA.
- Wang, S., Jiao, H., Young, M., & Jin, Y. (2006). *The effects of linking designs in vertical scaling on the growth patterns of student achievement.* Paper presented at the 13<sup>th</sup> International Objective Measurement Workshop, San Francisco, CA.
- Wang, S. & Jiao, H. (2005). *Cost-benefits of using computerized adaptive test for large-scale state assessment.* In the session of “Technical and Policy Issues in Using Computerized Adaptive Tests in State Assessments: Promises and Perils”. Paper presented at the National Conference of the Large-scale Assessment. San Antonio, TX.
- Jiao, H., Ro, S., Vukmirovic, Z., & Wang, S. (2005). *A comparison of different designs for calibrating mixed format items in a stand-alone field test.* Paper presented at the Annual Meeting of the American Educational Research Association.
- Vukmirovic, Z., Jiao, H., & Turhan, A. (2005). *A comparison among different methods used to establish a common metric for field-test items.* Paper presented at the Annual Meeting of the American Educational Research Association.
- Wang, S., Jiao, H., & Severance, N. (2005). *An investigation of growth patterns of student*

- achievement using unidimensional and multidimensional vertical scale methods*. Paper presented at the Annual Meeting of the National Council on Measurement in Education. Montreal, Canada.
- Wang, S., Jiao, H. & Brooks, T. (2005). *Construct equivalence between customized and original standardized reading comprehension tests*. Paper presented at the Annual Meeting of the American Educational Research Association.
- Jiao, H., & Wang, S. (2004). *Psychometric issues in developing Stanford English proficiency test*. Paper presented at the International Examination Forum. Tianjin, China.
- Jiao, H., & Lau, A. (2004). *Mixing linear and adaptive algorithms in computerized classification test*. Paper presented at the 28<sup>th</sup> International Congress of Psychology. Beijing, China.
- Jiao, H., & Wang, S., & Vukmirovic, Z. (2004). *The effects of random sampling on the Mantel Statistics*. Paper presented at the 28<sup>th</sup> International Congress of Psychology. Beijing, China.
- Jiao, H., & Wang, S., & Vukmirovic, Z. (2004). *The Consistency of using different matching variables in detecting Differential Item Functioning*. Paper presented at the 28<sup>th</sup> International Congress of Psychology. Beijing, China.
- Jiao, H., Wang, S., Lau, A. C., & Zhang, H. (2004). *Comparison of computerized adaptive test and computerized classification test in making dichotomous classification decisions*. Paper presented at the 28<sup>th</sup> International Congress of Psychology. Beijing, China.
- Jiao, H., Wang, S., & Lau, A. C. (2004). *An investigation of two combination procedures of SPRT for three-category classification decisions in computerized classification test*. Paper presented at the Annual Meeting of American Educational Research Association. San Diego, CA.
- Lau, A. C., Jiao, H., & Lam, W. (2004). *A simulation study to investigate the properties of pattern scoring and number-correct scoring using IRT model*. Paper presented at the Annual Meeting of American Educational Research Association. San Diego, CA.
- Wang, S., & Jiao, H. (2004). *Development of Stanford achievement and diagnostics Test*. Paper presented at the International Examination Forum. Tianjin, China.
- Stephenson, A., & Jiao, H. (2004). *Comparison of native and non-native speakers of English on an English language proficiency test*. Paper presented at the Annual Meeting of American Educational Research Association. San Diego, CA.
- Jiao, H. (2003). *The effects of model specification error in item response theory based*

*computerized classification test using sequential probability ratio test.* Unpublished doctoral dissertation. Florida State University. Tallahassee, FL.

Jiao, H., & Kamata, A. (2003). *Model comparisons in the presence of local item dependence.* Paper presented at the Annual Meeting of American Educational Research Association. Chicago, IL.

Jiao, H., & Lau, A. C. (2003). *The effects of model misfit in computerized classification test.* Paper presented at the Annual Meeting of the National Council on Measurement in Education. Chicago, IL.

Stephenson, A., & Jiao, H. (2003). *Classification of students' English proficiency with Discriminant Analysis.* Paper presented at the Annual Meeting of the American Educational Research Association. Chicago, IL.

*Selected Technical and Research Reports on State Assessment Programs*

Jiao, H., Wang, S., Johnson, M., & Jiang, J. (2007). *Investigation of 2006 FCAT Reading Grade 3 Test.* (Research Report). San Antonio, TX: Harcourt Assessment.

Jiao, H. (2007). *The calibration, equating, and scaling specification for the spring 2007 test administration for the Mississippi Subject Area Testing Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.

*Technical Report for the Michigan Educational Assessment Program 2006-2007 Cycle.* (2007). Harcourt Assessment Inc. San Antonio, TX.

*Technical Report for the Michigan Merit Exit Program 2006-2007 Cycle.* (2007). Harcourt Assessment Inc. San Antonio, TX.

Jiao, H. (2007). *The calibration, equating, and scaling specification for the Fall 2006 test administration for the Mississippi Subject Area Testing Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.

Jiao, H. (2006). *Sampling Design for the Michigan Educational Assessment Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.

Vukmirovic, Z., & Jiao, H. (2006). *Calibration and equating options for FCAT writing + assessment.* (White Paper). San Antonio, TX: Harcourt Assessment.

Jiao, H. (2006). *Test Construction Specification for the Michigan Educational Assessment Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.

Jiao, H., Wang, S., He, W., & Vukmirovic, Z. (2006). *The comparability of the spring 2006*

- online pilot test and the paper-and-pencil tests for the Mississippi Subject Area Testing Program.* (Research Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H. (2006). *The test construction specification for the Fall 2006 and Spring 2007 test administrations for the Mississippi Subject Area Testing Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H. (2006). *The calibration, equating, and scaling specification for the Spring 2006 test administration for the Mississippi Subject Area Testing Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H., & Vukmirovic, Z. (2006). *The calibration, equating, and scaling specification for the Fall 2005 test administration for the Mississippi Subject Area Testing Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.
- Vukmirovic, Z., Jiang, J., & Jiao, H. (2005). *Comparison of different scoring methods of FCAT writing + assessments.* (Research Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H., & Vukmirovic, Z. (2005). *The comparability of the spring 2005 online pilot test and the paper-and-pencil tests for Mississippi Subject Area Testing Program.* (Research Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H. (2005). *The test construction specification for the Fall 2005 and Spring 2006 test administrations for the Mississippi Subject Area Testing Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H., & Vukmirovic, Z. (2005). *The calibration, equating, and scaling specification for the Spring 2005 test administration for the Mississippi Subject Area Testing Program.* (Technical Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H., Ayres, G., & Vukmirovic, Z. (2005). *Pre-equating vs. post-equating for Mississippi Subject Area Testing Program.* (Research Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H., Ayres, G., & Vukmirovic, Z. (2005). *Impact of removing open-ended items from live administration for Mississippi Subject Area Testing Program.* (Research Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H., Chu, K., & Vukmirovic, Z. (2005). *Comparison of writing prompts in field-test and live administration for Mississippi Subject Area Testing Program.* (Research Report). San Antonio, TX: Harcourt Assessment.
- Wang, S, Jiao, H., Young, M. J., Brooks, T., & Olson, J. (2005). *The effect of computerized test vs. paper-and-pencil test on K-12 student reading achievement: A meta-analysis.* (Research Report). San Antonio, TX: Harcourt Assessment.

- Jiao, H., Wang, S., Vukmirovic, Z., & Young, M. (2004). *A Study to Establishing the Vertical Scale for MCA-II Using the Stanford Achievement Test 10*. (Research Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H., Wang, S. & Vukmirovic, Z. (2004). *Dimensionality Assessment for MCAS Grade 4, 7, and 10 ELA 2003 Test Administration*. (Research Report). San Antonio, TX: Harcourt Assessment.
- Jiao, H. & Vukmirovic, Z. (2004). *Test construction specifications for Minnesota Academic Assessments-II 2005 pilot test administration*. (Technical report). Harcourt Assessment, Inc. San Antonio, TX.
- Wang, S, Jiao, H., Young, M. J., Brooks, T., & Olson, J. (2004). *The effect of computerized test vs. paper-and-pencil test on K-12 student mathematics achievement: A meta-analysis*. (Research Report). San Antonio, TX: Harcourt Assessment.
- Wang, S, Jiao, H., Brooks, T., & Young, M. J. (2004). *Construct equivalence of Stanford Diagnostic Reading Test (Fourth Edition) between two administration modes*. (Research Report). San Antonio, TX: Harcourt Assessment.
- Wang, S, Jiao, H., Young, M. J., & Brooks, T. (2004). *Construct equivalence between customized and original Stanford Achievement Reading Comprehension Tests (Tenth Edition)*. (Research Report). San Antonio, TX: Harcourt Assessment.
- Davis, J., Jiao, H., Vukmirovic, A., & Young, M. J. (2004). *Comparison between pre-equating and post-equating for large-scale state assessment program*. (Research report), Harcourt Assessment Inc. San Antonio, TX.
- Stephenson, A., Jiao, H., & Wall, N. (2004). *A performance comparison of native and Non-native speakers of English on an English Language Proficiency Test*. (Research report). Harcourt Assessment, Inc. San Antonio, TX.
- Nevada Technical Report for the CRT and HSPE Assessments 2002-2003 Cycle*. (2004) Harcourt Assessment Inc. San Antonio, TX.
- Jiao, H. & Paek, I. (2002). *Examining the relationship between the Full and the Abbreviated versions of the Stanford Diagnostic Tests for Reading and Mathematics*. Harcourt Educational Measurement. San Antonio, TX.
- Cerrillo, T., Young, M. J., Skorupski, W., Jiao, H., Paek, I., Shin, S., & Turner, J. (2002). *Performance Assessment research program: Analyses of bias and Differential Item Functioning on the New Standards Reference Examinations (Form E)*. Harcourt Educational Measurement, San Antonio, TX.

## **GRANTS**

*National Council of State Boards of Nursing, NLCEX Joint Research Committee 2009-2010*  
“A Partial Credit Modeling Study of NCLEX Innovative Items”  
Co-Principal Investigator

*University of Maryland, College Park, MD*  
The SPARC: Support Program for Advancing Research and Collaboration Award for 2008-2009  
Academic Year  
“Rasch Mixture Model for Testlet-Based Assessment”  
Principal Investigator

The General Research Board (GRB) Summer 2008 Award  
“The Effects of Anchor Item Selection on Item Response Theory True Score Equating in  
Nonequivalent-group Anchor-Test Equating Design”  
Principal Investigator

*University of Michigan, Ann Arbor, MI, 2003*  
The Spaan Fellowship  
Evaluating the Dimensionality of the Michigan English Language Assessment Battery  
Principal Investigator

## **HONORS AND AWARDS**

*University of Maryland, College Park, MD*  
The SPARC: Support Program for Advancing Research and Collaboration Award for 2008-2009  
Academic Year  
The General Research Board (GRB) Summer 2008 Award

*Harcourt Assessment, Inc., San Antonio, TX*  
The Revere Award for Customer Focus for the 2<sup>nd</sup> Quarter 2005

*University of Michigan, Ann Arbor*  
Spaan Fellowship (2003)  
Funded research in Second or Foreign Language Testing

*Harcourt Educational Measurement, San Antonio, TX*  
Lenke Psychometric Fellowship (Summer 2002)

*Florida State University, Tallahassee, FL*  
Academic Conference Attendance Grant (April 2002)  
University Fellowship (1998-2001)  
Graduate Assistantship (1999-2000)  
Teaching Assistantship (January- April 1999)

*Shanghai Jiao Tong University, Shanghai, China*

Liu Yonglin Excellent Teaching Prize (1996)

Star Teacher (1996)

Teaching Excellence Award (1993)

Excellent Graduate Award of Shanghai City (1992) (Awarded for overall excellence in graduate studies by Shanghai Municipality, China)

### **PROFESSIONAL AFFILIATION**

American Educational Research Association

National Council on Measurement in Education

### **REVIEWERS**

6/2008 to Present Applied Psychological Measurement

10/2008 to Present Educational and Psychological Measurement

2004-2009 AERA annual meeting Division D, SIG for Rasch Measurement Model  
NCME annual meeting

2008 FERA (Florida Educational Research Association) annual meeting

2005-2007 SIG for Hierarchical Linear Modeling,

2007 SERA (Southwest Educational Research Association) annual meeting

2005, 2007 SIG for Research on the Inclusions of Students with Disabilities and Limited  
English Proficient Students in Large-scale Assessments,

2004 SIG for Licensure and Certification Tests

### **DISSERTATION COMMITTEES**

Advisor: Ru Lu

Fu Liu

Ming Li

Committee Member: Yi Cao (completed)

Yunyun Dai

Dongyang Li (completed)

Marc Kroopnick

Feifei Li

### **COURSES TAUGHT**

*University of Maryland, College Park, MD*

Fall 2009

Seminar: Psychometrics in large-scale assessments

Fall 2008, Spring 2009, Fall 2009

Quantitative Research Method II (Advanced Topics in Analysis of Variance)  
Special Topics in Measurement

Fall 2007, Spring 2008, Fall 2008, Spring 2009

Quantitative Research Method I (Descriptive and Inferential Statistics)

### **SERVICES**

April 2009 to Present: The Significant Contribution for Educational Measurement and Research  
Methodology committee, AERA-Division D.

January 2009 to Present: Awards Committee Member, College of Education, University of  
Maryland

August 2008 to Present: Senator of College of Education, University of Maryland

August 2008 to Present: Member of the International Committee of the College of Education at  
University of Maryland, College Park, MD

August 2007 to Present: Member of Graduate Student Admission Committee to Department of  
Measurement, Statistics, and Evaluation at University of Maryland, College Park,  
MD

August 2006 to May 2007: Member of the Language Proficiency Assessment Committee at  
Bulverde Creek Elementary School, San Antonio, TX