

Zhushan “Mandy” Li

Boston College

Lynch School of Education and Human Development

Department of Measurement, Evaluation, Statistics, and Assessment

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ACADEMIC APPOINTMENT

2016-present Associate Professor with tenure in the Department of Measurement, Evaluation, Statistics, and Assessment, Lynch School of Education and Human Development, Boston College

2010-2016 Assistant Professor in the Department of Measurement, Evaluation, Statistics, and Assessment, Lynch School of Education and Human Development, Boston College

EDUCATION

2010 Doctor of Philosophy in Educational Psychology with specialty area in psychometrics and statistics, Department of Educational Psychology, University of Illinois at Urbana-Champaign

2005 Master of Science in Statistics, Department of Statistics, University of Illinois at Urbana-Champaign

2002 Master of Science in Instructional Design and Instructional Technology (double major), Department of Curriculum and Instruction, Southern Illinois University at Carbondale

1999 Bachelor of Art in English, Shanghai International Studies University

AWARDS and FELLOWSHIP

2012 Faculty Fellowship, Boston College

2012 National Council of Measurement in Education (NCME) Brenda

- 2012 American Psychological Association (APA) Division 5 Distinguished Dissertation Award, Orlando, Florida. <http://www.apa.org/divisions/div5/awards.html>
- 2011 American Educational Research Association (AERA) Outstanding Quantitative Dissertation Award, New Orleans, LA <http://www.aera.net/Division-D/Awards/Outanding-Quantitative-Dissertation>
- 2009 William Chandler Bagley Doctoral Scholarship from University of Illinois Urbana-Champaign
- 2008 Best Junior Research Oral Presentation Award at the International Society of Psychometric Meeting, Durham, New Hampshire.
<http://www.psychometrika.org/meeting/2008/memories.html>
- 2008-2009 Jeffrey Tanaka Scholarship from University of Illinois Urbana-Champaign
- 2006 Departmental commendation of Excellent Doctoral Work for general qualifying exam
- 2004, 2005, 2006 Center of Teaching Excellence commendation of Excellent International Teaching Assistants Mentor Work at University of Illinois Urbana-Champaign
- 2003 ACT Incorporate summer intern, quantitative analysis of the WorkKeys program

FUNDED GRANTS

- 2019 NSF grant. Role: Statistical Consultant. *The Elementary Mathematics Project* (\$1,618,452.00). Funded by the National Science Foundation, 2016-2021.
- 2019 IES grant. Role: Statistical Consultant. *Moving Transition Forward: Exploration of College-*

2014 Research Expense grant. Role: Principal Investigator. *Generalized Formula for Power and Sample Size for Logistic Regression DIF in the Context of Item Response Theory* (\$2,000). Funded by Boston College, 2014-2015

2012 NSF grant (Award Number: 1227245). Role: Co-Principal Investigator. *DIP: Using dynamic formative assessment models to enhance learning of the experimental process in biology* (\$1,333,395). Funded by the National Science Foundation, 2012-2016.

2012 Research Incentive grant. Role: Principal Investigator. *Explanatory item response theory models with multidimensional latent traits* (\$15,000). Funded by Boston College, 2012-2013

2011 Research Expense grant. Role: Principal Investigator. *Multi-category item response modeling in the context of outcome measurement* (\$2,000). Funded by Boston College, 2011-2012

2011 Teaching, Advising, Mentoring Expense grant (\$1,126). Funded by Boston College, 2011

2008 Conference travel grant (\$500). Funded by graduate college & the department of Educational Psychology at University of Illinois Urbana-Champaign (UIUC)

2008 Educational Testing Service (ETS) student conference travel grant. Funded by ETS

2005 Conference travel grant (\$500). Funded by graduate college & the department of Educational Psychology at University of Illinois Urbana-Champaign (UIUC)

2005 National Center for Educational Statistics (NCES) travel grant. Funded by NCES

GRANTS SUBMITTED

2019 Sage foundation grant. Role: Co-Principal Investigator. The effects of sexual violence on mental health and help-seeking among Asian American. (\$168,543.00) Sage Foundation, 2020-2022

2018 NSF grant. Role: W ion, i MM (\$1,3

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2015 IES grant. Role: Research Consultant. *Exploring Friendship Expectations and Responses to Violations in Youth with Autism Spectrum Disorder*

- Li, Z.** (2015). A generalized formula for the power of the Mantel-Haenszel test for differential item functioning. *Applied Psychological Measurement, 39*(5), 373-388
- Li, Z.** (2014). The effect size for simultaneous item bias test. In *JSM Proceedings, Social Statistics Section*. Boston, MA: American Statistical Association. 4125-4133.
- Li, Z.** (2014). Power and sample size calculations for logistic regression tests for differential Item functioning. *Journal of Educational Measurement. 51*(4), 441-462
- Li, Z.** (2014). A power formula for the SIBTEST procedure for differential item functioning. *Applied Psychological Measurement, 38*(4), 311-328
- Tummala-Narra, P., **Li, Z.**, Liu, T., & Wang, Y. (2014). Violence exposure and mental health among adolescents: The role of ethnic identity and help seeking. *Psychological Trauma: Theory, Research, Practice, and Policy, 6*(1), 8-24
- Li, Z.** & Hong, F (2013). plRasch: Fit Log Linear by Linear Association models and Rasch family models. Version 1.0. R package available on CRAN
<http://cran.r-project.org/web/packages/plRasch/index.html>
- Bu, C., **Li, Z.**, & Xu, H (2013). What does ipad bring for math education? ---Prospects from American education experiences and beyond. *University Education, 14*, 77-78.
- Huebner, A., & **Li, Z.** (2012). A stochastic method for balancing item exposure rates in computerized classification tests. *Applied Psychological Measurement, 36*(3), 181-188.
- Reeves, T. D., & **Li, Z.** (2012). Teachers' technological readiness for online professional development: Evidence from the US e-Learning for educators initiative. *Journal of Education for Teaching, 38*(4), 389-406.
- Tummala-Narra, P., Singer, R., **Li, Z.**, Esposito, J., & Ash, S. (2012). Individual and systemic factors in clinicians' self-perceived cultural competence. *Professional Psychology: Research and Practice, 43*(3), 165-174.
- Huang, I. C., Quinn, G. P., Wen, P. S., Shenkman, E. A., Revicki, D. A., Krull, K., **Li, Z.**, & Shearer, P. D. (2012). Using three legacy measures to develop a health-related quality of life tool for young adult survivors of childhood cancer. *Quality of Life Research, 21*, 1437-1450.
- Li, Z.** & Hong, F (2007). plRasch: Loglinear by linear association models. Version 0.1. R package on CRAN.

Anderson, C. J., Li, Z., & Vermunt, J. K. (2007). Estimation of models in a Rasch family for polytomous items and multiple latent variables. *Journal of Statistical Software*, 20(6), 1-36. <http://www.jstatsoft.org/v20/i06>

DISSERTATION

Li, Z. (2010) Dissertation: Loglinear Models as Item Response Models.

INVITED TALKS

Li, Z. (2017, July). *Application of categorical data analysis and psychometric methods in educational research*. Invited talk at the Center of Evaluation and Assessment in Foshan, China.

Li, Z. (2013, August). *A power formula for the SIBTEST procedure for differential item functioning*. Invited talk at the Department of Statistics at University of South Carolina, Columbia, SC

Li, Z. (2013, April). *Expanding applicability of explanatory item response models through a log-linear model framework*. Invited talk at the Annual Meeting of the National Council on Measurement in Education, San Francisco, CA.

Li, Z. (2012, August). *Log-linear models as item response models: Dutch identity and beyond*. Invited talk at the Annual Convention of the American Psychological Association, Orlando, FL.

Li, Z. (2011, July). *Latent variable models for the analysis of cross-classified categorical data*. Invited talk at Chinese Academy of Sciences, China.

Li, Z. (2011, July). *Categorical data analysis in health outcome research*. Invited talk at Zhongshan University, China.

Li, Z. (2010, February). *Log-linear models as item response theory models with covariates*. Invited talk at Boston College, Chestnut Hill, MA.

Li, Z. (2010, January). *Application of linear-by-linear association models on verbally aggressive behavior*. Invited talk at University of Massachusetts Medical School, Worcester, MA.

Li, Z. (2009, January). *Rasch related loglinear models: a pseudolikelihood approach*. Invited talk at Measured Progress, Dover, NH.

CONFERENCE PAPERS & SEMINAR PRESENTATIONS

- Jiang, J., & Li, Z. (2016, April). *Effects of Anchor Selection Strategies with the Presence of Differential Item Functioning for Pseudo-Guessing Parameters*. Paper presented at the 48th Annual Meeting of the New England Educational Research Organization (NEERO), Portsmouth, NH.
- Li, Z. (2016, April). *A Power Formula for the Crossing SIBTEST for Uniform and Non-Uniform Differential Item Functioning*. Paper presented at the Annual Meeting of American Educational Research Association, Washington D.C.
- Roy, C., Bakan, G. Li, Z. & Nguyen, T. (2016, January). *Creating Coping and Adaptation Processing Scale: Short Form*. Paper presented at the CSON Think Tank, Boston.
- Jiang, J., & Li, Z. (2015, July). *Anchor Item Selection Methods in Differential Item Functioning Analysis*. Paper presented at the 80th International Meeting of Psychometrics Society (IMPS), Beijing, China.
- Jiang, J. & Li, Z. (2015, April). *Non-parametric and Parametric IRT Modeling of Math Attitude Data*. Paper presented at the Annual Meeting of New England Educational Research Organization, Portsmouth, NH.
- Li, Z. (2015, April). *Power Formulas for the Logistic Regression Tests for Uniform and Non-Uniform Differential Item Functioning*. Paper presented at the Annual Meeting of American Educational Research Association, Chicago, Illinois.
- Li, Z. & Jiang, J. (2015, April). *Power and Sample Size Formulas for Mantel-Haenszel DIF Test*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, Chicago, Illinois.
- MacEvoy, J. P., Li, Z., & Chyou, L. G.* (2015, March). *Friendship-contingent self-esteem in middle childhood: Gender differences and links with adjustment*.

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- Jiang, J., Li, Z. (2014, April). *Application of multidimensional item response theory models in large-scale assessment: three-way comparisons on PISA data*. Paper presented at the Annual Meeting of New England Educational Research Organization, Dover, VT.
- Li, Z. (2014, April). *Log-linear item response theory model for person-by-item interactions*. Paper presented at the Annual Meeting of American Educational Research Association, Philadelphia, Pennsylvania.
- Kavita, Mariela, & Li. (2014, April). *The Development of Vocabulary and Comprehension in Spanish-speaking English Learners (ELLs)*. Paper presented at the Annual Meeting of American Educational Research Association, Philadelphia, Pennsylvania.
- Li, Z. (2014, April). *A power formula for SIBTEST*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, Philadelphia, Pennsylvania.
- Zhang, L., Li, Z., & Lee, Y. (2013, October). *Is hands-on science learning effective in schools? An examination of TIMSS 2007 data*. Paper presented at the 44th Annual Conference of the Northeastern Educational Research Association, Rocky Hill, CT.
- Li, Z. (2013, April). *Expanding applicability of explanatory item response models through a log-linear model framework*. Invited talk at the Annual Meeting of the National Council on Measurement in Education, San Francisco, CA.
- Roussos, L., Li, Z., Lonczak, T. (2013, April). *Simple and interpretable effect size estimate for test multidimensionality via a nonparametric standard error of measurement*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, San Francisco, CA.
- Li, Z. (2012, May). *An investigation of log-linear model procedure for the detection of differential item functioning*. Paper presented at the Annual Meeting of the New England Educational Research Organization, Portsmouth, NH.
- Li, Z. (2012, April). *A new tool for fitting polytomous item response theory models*. Paper presented at the Annual Meeting of American Educational Research Association, Vancouver, CA.
- Li, Z. (2012, April). *Log-linear item response model for DIF detection: a pseudolikelihood approach*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, Vancouver, CA.

- Reeves, T., Li, Z. (2012, April) *Differences in teachers' technological readiness for online professional development*. Paper presented at the Annual Meeting of American Educational Research Association, Vancouver, CA.
- Roussos, L., Lonczak, T., Li, Z. (2012, April). *A nonparametric conditional standard error of measurement for use in alternate assessments and in checking IRT assumptions*. Paper presented at the Annual Meeting of the National Council on Measurement in Education, Vancouver, CA.
- Liu, T., Tummala-Narra, U., Li, Z. (2011, October) *Gender and ethnic differences in exposure to violence and its impact on emotional well-being of adolescents*. Poster presented at Diversity Challenge conference, Boston.
- Li, Z. (2011, August). *Polytomous IRT models under log-linear model framework*. Poster presented at the Annual Convention of the American Psychological Association, Washington D.C.
- Li, Z. (2011, July). *Log-linear item response models for polytomous data*. Paper presented at the International Psychometric Society Meeting, Hongkong, China.
- Roussos, L., Li, Z. (2011, July). *Nonparametric method for estimating conditional standard error of measurement for test scores*. Paper presented at the International Psychometric Society Meeting, Hongkong, China.
- Huang, I., Quinn, G., Li, Z., & Shenkman, E. (2011, July) *Item banks of quality of life measures on young adult survivors of childhood cancer*. Paper presented at the International Psychometric Society Meeting, Hongkong, China.
- Li, Z. (2011, April). *Log-linear models as polytomous IRT models*. Paper presented at the Annual Meeting of New England Educational Research Organization, New Bedford, MA.
- Li, Z. (2011, January). *Can we fit a variety of measurement models under one framework?* Invited talk at ERME Seminar in Boston College, Chestnut Hill, MA.
- Li, Z. (2009, April). *Some issues and proposed methods in explanatory item response measurement*. Paper presented at Queries Seminar in the Department of Educational Psychology, University of Illinois at Urbana-Champaign.
- Li, Z. (2008, October). *Using loglinear item response models to detect DIF*. Paper presented at Queries Seminar in the Department of Educational Psychology, University of Illinois at Urbana-Champaign.

Regression. University of Illinois at Urbana Champaign

Evaluation Methods. University of Illinois at Urbana Champaign

PROFESSIONAL SERVICE

2011 Annual Meeting of the National Council on Measurement in Education (NCME) session chair for *estimating parameters of multidimensional item response theory models*

Annual Meeting of the National Council on Measurement in Education (NCME) reviewer (2006-2014, 2019)

Annual Meeting of the American Educational Research Association reviewer (2011-present)

External reviewer for Research Grants Council (RGC) of Hong Kong

Ad-Hoc Manuscript Reviewer: *British Journal of Mathematical and Statistical Psychology*, *Applied Psychological Measurement*, *Journal of Educational Measurement*, *Frontiers in Psychology*, *Journal of Classification*, *PLOS One*, *Quality of Life Research*, *Applied Psycholinguistics*, *Educational Policy*, *Social Science Computer Review*,

BOSTON COLLEGE SERVICE

Lynch School of Education EPC (Education Policy Council) Committee 2019 Aug.- present

Lynch School of Education EPC Sub-Committee on Academic Integrity 2019 Aug.- present

Search Committee for Research Statistician Position

x Search committee member for Boston College Research Services 2019 Sep.- Dec.

University IRB committee

x Member of the University IRB Committee 2017-2020

Search Committee for Evaluation Position 2017

x Search committee chair for the faculty position of evaluation

MS Program Director 2017-present

x Master of Science in Applied Statistics and Psychometrics Program Director

Lynch School of Education Academic Standards Committee 2011-2014

x Member of the LSOE Academic Standards Committee

Commencement Faculty Marshal 2013- present

Cloud-Software Steering committee 2011-2018

x Member of the cloud-software steering committee at Boston college for the usage of different software

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Sebastian Moncaleano (Oral), Katherine Reynolds, Kevin Holbrook, Romita Mitra(Oral) , Gulsah Gurkan(Oral), David Bamat

2018 master of science students (the written comprehensive exam committee)

Yanyi Jiang and Tianyuan Jiang

2018 M.Ed students oral exam

Jane Heaney, Xuefeng Yan, Qiuyi Lu

2017 doctoral students of the written comprehensive exam

Kaitlyn Tuthill, Kerry Cotter(Oral), Maria Baez, Jorge Mahecha, Tong Shen(Oral), Jordan Lawson(Oral), Michael Kelly

2017 master of science students of the written comprehensive exam

Eliyahou Ohana, Sujin Ko, Jiaqi Cai, Yuting Sui

2016 doctoral students of the written comprehensive exam

Bethany Fishbein, Amy Semerjian(oral), Jing Jiang(oral), Katy, Avery Newton

2016 master students of the oral comprehensive exam

Yanying An, Yihua Jia, Zhengmin Li

2015 doctoral students of the written comprehensive exam

Martin Hooper, Caroline Vuilliemier, Shiya Yi, Wenchia Claire Chang, Kelsey Klein

2015 master students of the oral comprehensive exam

Quan Yuan, Peiyan Liu

2014 doctoral students of the written comprehensive exam

Courtney Castle, Victoria A Centurino

2014 doctoral and master students of the oral comprehensive exam

Courtney Castle, Claire Hou, Conor Sullivan, Sean Tan, Julia Casasanto-Ferro, Mengtan Xu, Vera Shao, Vanessa Olivacce, Loucia Jose

2013 doctoral students of the written comprehensive exam

Josh Tobias, Minsong Kim, & Clair Johnson

2013 doctoral and master students of the oral comprehensive exam

Minsong Kim, Clair Johnson, Lorrain

