

Curriculum Vitae
Ying (“Alison”) Cheng

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Degrees

University of Illinois at Urbana-Champaign	Ph.D. in Quantitative Psychology	2008
University of Illinois at Urbana-Champaign	M.S. in Statistics	2007
University of Science and Technology of China	B.A & B.E.	2003

Academic Appointments

2017 – present Program Director, Quantitative Psychology area, University of Notre Dame
2014 – present Associate Professor, Department of Psychology, University of Notre Dame
2012 – present Fellow, Institute for Educational Initiatives, University of Notre Dame
2008– 2014 Assistant Professor, Department of Psychology, University of Notre Dame

Professional Appointments

2018 – present Board of Examiners, *American Institute of Certified Public Accountants*.
2014 – present Psychometric Oversight Committee, *American Institute of CPAs*.
2016 – present Technical Advisory Board of GRE, *ETS*.
2017 – present Chair of Editorial Council, *Psychometric Society*.
2015 – present Associate Editor, *American Educational Research Journal*.
2013 – present Associate Editor, *British Journal of Mathematical and Statistical Psychology*.

Awards and Honors

2017: Elected Fellow, *Society of Multivariate and Experimental Psychology (SMEP)*

SMEP is a small elective society of researchers interested in multivariate quantitative methods and their application to substantive problems in psychology and related fields. Its number of fellows is limited to 65.

2014: Faculty Early Career Award, *National Science Foundation*

The Faculty Early Career (CAREER) award is the National Science Foundation's most prestigious award in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research.

2014: Best paper award from *European Congress of Methodology*

The award winning paper is entitled "Estimation and Confidence Interval Formation for Reliability Coefficients of Homogeneous Measurement Instruments" (Kelly & Cheng, 2012). The best paper award is a bi-annual award given to the best article published in this journal in the previous two years.

2014: Best paper award, *American Educational Research Association Division D Research Gala* (Awarded to Can Shao; My role: Advisor and co-author)

2012: The Jason Millman Promising Scholar Award, *National Council of Measurement in Education*.

The Jason Millman Promising Scholar Award of NCME recognizes a scholar at the early stages of his/her career whose research has the potential to make a major contribution to the applied measurement field.

2009: The Bradley Hanson Award for Contributions to Educational Measurement, *National Council on Measurement in Education*.

The Bradley Hanson Award of NCME recognizes a project from a scholar that promises to make a substantive contribution to the field of educational measurement or the development, instruction or mentoring of new professionals in the field.

2007: List of Teachers Ranked as Excellent by Their Students, *University of Illinois at Urbana-Champaign*.

2007: Summer Research Internship, *College Board*.

2005 - 2007: Graduate Research Grant Award, *College Board*.

2005: Summer Research Internship, *ACT*.

2004: Slawski Summer Psychometric Fellowship, *Harcourt Assessment*.

Books

Cheng, Y., & Chang, H. (Eds). (2014). *Advancing Methodologies to Support Both Summative and Formative Assessments*. Charlotte, NC: Information Age Publishing. ISBN-10:1623965950. ISBN-13: 978-1623965952.

Journal Articles (*: Current/Former Graduate Student as First Author)

1. Liu, C., & Cheng, Y. (in press). An application of the support vector machine for attribute-by-attribute classification in cognitive diagnosis. doi: 10.1177/0146621617712246.

2. Yuan, K., Jiang, G., & **Cheng, Y.** (2017). More efficient parameter estimates for factor analysis of ordinal variables by ridge generalized least squares. *British Journal of Mathematical and Statistical Psychology*, *70*, 525-564. doi: 10.1111/bmsp.12098.
3. Lathrop, Q. N.*, & **Cheng, Y.** (2017). Item cloning variation and the impact on the parameters of response models. *Psychometrika*, *82*, 245-263. doi: 10.1007/s11336-016-9513-1.
4. **Cheng, Y.**, Diao, Q., & Behrens, J. (2017). A simplified version of the maximum information per time unit method in computerized adaptive testing. *Behavioral Research Methods*, *49*, 502-512. doi: 10.3758/s13428-016-0712-6.
5. Shao, C.*, Li, J., & Cheng, Y. (2016). Detection of speeded responses in linear tests based on change-point analysis. *Psychometrika*, *81*, 1118-1141. doi: 10.1007/s11336-015-9476-7.
6. **Cheng, Y.**, & Liu, H.* (2016). A short note on the maximal point-biserial correlation under non-normality. *British Journal of Mathematical and Statistical Psychology*, *69*, 344-351. doi: 10.1111/bmsp.12075.
7. **Cheng, Y.**, & Liu, C. (2016). A note on the relationship between pass rate and multiple attempts. *Journal of Educational Measurement*, *53*, 431-447. doi: 10.1111/jedm.12124.
8. **Cheng, Y.**, Shao, C.*, & Lathrop, Q.* (2016). The mediated MIMIC model for understanding the underlying mechanisms of DIF. *Educational and Psychological Measurement*, *76*, 1-21. doi: 10.1177/0013164415576187.
9. Narvaez, D., Wang, L., & **Cheng, Y.** (2016). Evolved developmental niche history: Relation to adult psychopathology and morality. *Applied Developmental Science*, *20*, 294-309. doi: 10.1080/10888691.2015.1128835.
10. Jean-Pierre, **Cheng, Y.**, Wells, K. J., Freund, K. M. et. al. (2016). Satisfaction with cancer care among underserved racial-ethnic minorities and lower income patients receiving patient navigation. *Cancer*, *122*, 1060-1067. doi: 10.1002/cncr.29902.
11. **Cheng, Y.**, & Liu, C. (2015). The effect of upper and lower asymptotes of IRT models in computerized adaptive testing. *Applied Psychological Measurement*, *39*, 551-565.
12. **Cheng, Y.**, Liu, C., & Behrens, J. (2015). Standard error of ability estimates and the classification accuracy and consistency of binary decisions in linear and adaptive testing. *Psychometrika*, *80*, 645-664.
13. **Cheng, Y.**, Patton, J., & Shao, C. (2015). a -stratified computerized adaptive testing in the presence of calibration error. *Educational and Psychological Measurement*, *75*, 260-283.

14. Yuan, K., **Cheng, Y.** & Maxwell, S. (2014). Moderation analysis using a two-level regression model. *Psychometrika*, 79, 701-732.
15. Lathrop, Q. N.*, & **Cheng, Y.** (2014). A nonparametric approach to estimate classification accuracy and consistency. *Journal of Educational Measurement*, 51, 318-334.
16. Jean-Pierre, **Cheng, Y.**, Paskett, E., Shao, C. et. al. (2014). Item response theory analysis of the patient satisfaction with cancer-related care measure. *Supportive Care in Cancer*, 22, 2229-2240.
17. Patton, J.*, **Cheng, Y.**, Yuan, K., & Diao, Q. (2014). Bootstrap standard errors for maximum likelihood ability estimates when item parameters are unknown. *Educational and Psychological Measurement*, 74, 697-712.
18. Yuan, K-H., **Cheng, Y.**, & Patton, J. (2014). Information matrices and standard errors for MLEs of item parameters in IRT. *Psychometrika*. 79, 232-254.
19. Narvaez, D., Gleason, T., Brooks, J., Wang, L., Lefever, J., & **Cheng, Y.** (2013). Longitudinal Effects of Ancestral Parenting Practices on Early Childhood Outcomes. *Early Childhood Research Quarterly*, 28, 759-773.
20. **Cheng, Y.**, Chen, P-H., Qian, J. & Chang, H. (2013). Equated pooled booklet method in DIF testing. *Applied Psychological Measurement*, 37, 276-288.
21. Narvaez, D., Wang, L., Gleason, T., **Cheng, Y.**, Lefever, J., & Deng, L. (2013). The evolved developmental niche and child sociomoral outcomes in Chinese three-year-olds. *European Journal of Developmental Psychology*, 10, 106-127.
22. Lathrop, Q. N.*, & **Cheng, Y.** (2013). Two approaches to estimation of classification accuracy under the IRT framework. *Applied Psychological Measurement*, 37, 226-241.
23. **Cheng, Y.**, & Morgan, D. (2013). Classification accuracy and consistency of computerized adaptive testing. *Behavioral Research Methods*, 45, 132 – 142.
24. Patton, J.*, **Cheng, Y.**, Yuan, K., & Diao, Q. (2013). The Influence of item calibration error on variable-length computerized adaptive testing. *Applied Psychological Measurement*, 37, 24-40.
25. Kelly, K., & **Cheng, Y.** (2012)[◇]. Estimation of and confidence interval formation for reliability coefficients of homogeneous measurement instruments. *Methodology*, 8, 39-50.

◇ **Best paper award**

26. Patton, J.*, **Cheng, Y.**, Yuan, K-H., & Diao, Q. (2012). Computerized classification testing with sequential probability ratio test. *Psychological Test and Assessment Modeling*, 54(4), 432-449.
27. **Cheng, Y.**, Yuan, K-H., & Liu, C. (2012). Comparison of reliability measures under factor analysis and item response theory. *Educational and Psychological Measurement*, 72, 52-67.
28. **Cheng, Y.** (2012). Review of Elements of Adaptive Testing. *Journal of Educational Measurement*, 49, 116-119.
29. **Cheng, Y.** (2010). Improving cognitive diagnostic computerized adaptive testing by balancing attribute coverage: The modified maximum global discrimination index method. *Educational and Psychological Measurement*, 70, 902-913.
30. Yuan, K-H, **Cheng, Y.**, & Zhang, W. (2010). Determinants of standard errors of MLEs in confirmatory factor analysis. *Psychometrika*, 75, 633–648.
31. **Cheng, Y.** & Yuan, K-H. (2010). The impact of fallible item parameter estimates on latent trait recovery. *Psychometrika*, 75, 280-291.
32. **Cheng, Y.** (2009). When cognitive diagnosis meets computerized adaptive testing: CD-CAT. *Psychometrika*, 74, 619-632.
33. **Cheng, Y.**, & Chang, H. (2009). The maximum priority index method for severely constrained item selection in computerized adaptive testing. *British Journal of Mathematical and Statistical Psychology*, 62, 369-383.
34. **Cheng, Y.**, Chang, H., Douglas, J., & Guo, F. (2009). Constraint-weighted a-stratification for computerized adaptive testing with nonstatistical constraints: Balancing measurement efficiency and exposure control. *Educational and psychological measurement*, 69, 35-49.
35. **Cheng, Y.**, Chang, H., & Yi, Q. (2007). Two-phase item selection procedure for flexible content balancing in CAT. *Applied Psychological Measurement*, 31, 467-482.

Book Chapters, Reviews and Encyclopedia Entries (*: Current/Former Graduate Student)

1. Brodersen, A.*, Shao., C.*, & **Cheng, Y.** (in press). Parameter Random Error. In Frey, B. (Ed), *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*.
2. Gleason, T., Narvaez, D., **Cheng, Y.**, Wang, L., & Brooks, J. (2016). Wellbeing and sociomoral development in preschoolers: The role of maternal parenting attitudes

- consistent with the evolved developmental niche. In Narvaez, D. et al. (Eds.), *Contexts for Young Child Flourishing: Evolution, Family, and Society*.
3. Gleason, T., Narvaez, D., **Cheng, Y.**, Wang, L., & Brooks, J., (2016). The relation of nurturing parenting attitudes to flourishing in preschoolers. In Narvaez, D. et al. (Eds.), *Contexts for young child flourishing: Evolution, family and society*. New York, NY: Oxford University Press.
 4. Narvaez, D., Gleason, T., Lefever, J. B., Wang, L., & **Cheng, Y.** (2016). Early experience and ethical orientation. In Narvaez, D. (Ed.), *Embodied morality: Protectionism, engagement and imagination*. New York, NY: Palgrave-Macmillan.
 5. von Davier, M., & **Cheng, Y.** (2014). Multistage testing using cognitive diagnostic models. In Yan, D., von Davier, A., & Lewis, C. (Eds.) *Computerized Multistage Testing: Theory and Applications*. Boca Raton, FL: CRC Press.
 6. Cheng, Y. & **Cheng, Y.** (2014). Repeated statistical tests in group sequential clinical trial designs and their potential applications in educational assessment. In Cheng, Y., & Chang, H. (Eds). *Advancing Methodologies to Support both Summative and Formative Assessments*. Charlotte, NC: Information Age Publishing.
 7. Patton, J,* & **Cheng, Y.** (2014). Effects of item calibration error on applications of item response theory. In Cheng, Y., & Chang, H. (Eds). *Advancing Methodologies to Support both Summative and Formative Assessments*. Charlotte, NC: Information Age Publishing.
 8. **Cheng, Y.**, & Keng, L. (2009). Computerized adaptive testing in criterion-referenced testing. In Smith, E. & Stone, G. (Eds.), *Applications of Rasch Measurement in Criterion-Reference Testing: Practice Analysis to Score Reporting*. JAM Press.
 9. **Cheng, Y.**, & Keng, L. (2009). Book review: H.Wainer, E.T. Bradlow, & X. Wang (2007) Testlet Response Theory and Its Applications. *Psychometrika*, 74, 555-557.
 10. Chang, H., & **Cheng, Y.** (2005). The new developments and future research direction in computerized adaptive testing. *Testing Research*, 2 (Chinese with English Abstract).

Selected Research Grants

Current

PI. 2016 – 2017. “Pretesting and Dimensionality Assessment of New Prototype Items”.

National Council of State Boards of Nursing.

\$41,190

- Co-PI.** 2015-2018 “Structural equation modeling for small N and large p ” (PI: Dr. Ke-Hai Yuan). *National Science Foundation, Methodology, Measurement and Statistics Program.* \$349,998.
- PI.** 2014-2019. “CAREER: Cognitive diagnostic computerized adaptive testing for AP Statistics”. *National Science Foundation, DRL-1350787.* \$592,986.

Completed External Grants

- PI. 2015.** “Bi-factor modeling for subscore reporting of NCLEX-RN”. *National Council of State Boards of Nursing.* \$42,860
- PI. 2015.** Career-Life Balance Initiative Supplemental Funding. *National Science Foundation.*
- PI. 2014.** “A close look at response time in computerized adaptive testing”. Innovation R & D Grant from *CTB/McGraw-Hill.* \$51,159
- PI. 2013.** “Careless response in testing: Detection of such responses, and analysis of their propagating impact on item calibration, ability estimation, and examinee classification”. Innovation R & D Grant from *CTB/McGraw-Hill.* \$85,059.
- PI. 2012.** “Analysis of the *MyMathTest* data and development of the adaptive version *MyMathTest*”. *Pearson, Inc.* \$37,000
- PI. 2011.** “Standard error estimation in IRT: Formula, bootstrap or MCMC?”. Innovation R & D Grant from *CTB/McGraw-Hill.* \$83,370.
- PI. 2010.** “Correction of calibration error in computerized adaptive testing”. Innovation R & D Grant from *CTB/McGraw-Hill.* \$90,000

Completed Internal Grants

- PI. 2013** “Variable-length cognitive diagnostic adaptive testing module for AP statistics”. Faculty Scholarship Research Program Initiation Grant from *Office of Research* at University of Notre Dame. \$10,000.
- PI. 2013** “Pilot Study -- Construction of an Item Bank for Advanced Placement Level Statistics with Cognitive Diagnostic Modeling”. Bi-Annual Spring 2013 Large Social Sciences Research Grant, *ISLA*, University of Notre Dame. \$8,000.
- Co-PI. 2012.** “Caregiving for the human developmental niche and child thriving”. (PI, Darcia Narvaez). *ISLA*, Notre Dame. \$6,000.

Co-PI. 2011. "First Birthday Club". (PI: Darcia Narvaez). *Institute for Scholarship in the Liberal Arts*, University of Notre Dame. \$7,478.

Co-PI. 2010. "Caregiving and child social, cognitive and moral development." (PI: Darcia Narvaez). *Institute for Scholarship in the Liberal Arts*, University of Notre Dame. \$15,000

PI. 2009. "Computerized adaptive system for cognitive diagnosis: A one-year pilot study of CD-CAT". Pilot funds for research in the social sciences, *Institute for Scholarship in the Liberal Arts*, University of Notre Dame. \$12,844.

Invited Talks

1. July 2017, International Meeting of Psychometric Society, Zurich, Switzerland
"Statistical Quality Control in Psychometrics"
2. Mar 2016, University of Zurich, Switzerland
Computerized adaptive testing: Its history and development
3. Mar 2016, DagStat Conference, German Consortium of Statistics, Gottingen, Germany
Computerized adaptive testing: Its history and development
4. March 2016, Joint Research Council meeting, National Council for State Boards of Nursing
Alternate item format, pretesting design, data sparseness and test dimensionality
5. Oct 2014, 2014 Meeting of the International Association of Computerized Adaptive Testing (IACAT), ETS, Princeton, NJ (Presenter: Matthias von Davier)
Invited Symposium Talk, *"Multistage Testing Using Diagnostic Models"*
6. Sept 2014, CTB/McGraw-Hill mid-year R&D symposium, Monterey, CA.
The maximum information per time unit method in computerized adaptive testing.
7. Aug 2014, National Council of State Boards of Nursing, Joint Research Council Meeting.
Use Bi-factor modeling for subscore reporting of NCLEX-RN
8. Aug 2014, Joint Statistical Meeting, American Statistical Association, Boston, MA
Detection and Treatment of Careless Responses in Survey Research
Session: Statistical Methods and Applications in Psychology and Educational Psychology
Sponsor: Committee on Applied Statisticians
9. Sept 2013, CTB/McGraw-Hill Innovation R & D Symposium, Monterey, CA.
Detection and treatment of careless responses in pretesting data.
10. July 2013, Arnhem, the Netherlands.

- 2013 International Meeting of the Psychometric Society,
State of the Art Invited Speech, "Classification decisions in testing"
11. April 2013, San Francisco, CA.
2013 Meeting of the National Council of Measurement in Education,
2012 Award Winners Session
 12. March 2013, Friedrich-Schiller-Universitat, Jena, Germany.
Invited workshop on computerized adaptive testing
 13. Sept 2012, Beijing Normal University and the National Center of Educational Testing and Evaluation of China, Beijing, China.
"Quantitative psychology: Its history, development and future"
 14. Sept 2012, Jiangxi Normal University and the 10th Cross-Strait Psychometric Conference, Nanchang, China.
"The theoretical development and applications of computerized adaptive testing"
 15. Oct 2011, CTB/McGraw-Hill Innovation R & D Symposium, Monterey, CA.
"Standard error of latent trait estimates in IRT when item calibration error is present"
 16. March, 2011. Featured speaker at CTB/McGraw-Hill R & D Annual Event, Monterey, CA.
"The interaction of exposure control methods and item calibration error in variable-length CAT"
 17. Sept 2010, CTB/McGraw-Hill Innovation R & D Symposium, Monterey, CA.
"The impact of fallible item parameters on variable-length CAT"
 18. June 2010. Soochow University College of Education 2010 Featured Talk Series, Suzhou, China.
"Modern psychometrics"
 19. July 2009. Statistical and Applied Mathematical Sciences Institute (SAMSI) 2009 Summer Program on Psychometrics, Research Triangle Park, NC.
"The interface of computerized adaptive testing and diagnostic assessment"
 20. Jan 2009. Center of National Assessment of Education Quality, Ministry of Education of China, Beijing, China.
"Item pool development"
 21. Jan 2009. Shangai Municipal Educational Examinations Authority, Shanghai, China.
"Automated test assembly"

22. Dec 2008. University of Science and Technology of China, Hefei, China.
“The history, development and prospect of psychometrics”
23. Feb 2008. University of Michigan at Ann Arbor, Ann Arbor, MI.
24. Feb 2008, University of Illinois at Urbana-Champaign, Champaign, IL.
25. Jan 2008. New York University, NYC, NY.
26. Jan 2008. Columbia University, NYC, NY.
27. Dec 2007. University of Illinois at Chicago, Chicago, IL.
28. Dec 2009. University of Notre Dame, Notre Dame, IN.
29. Dec 2007. Vanderbilt University, Nashville, TN.
30. Nov 2007. City University of New York, NYC, NY.
31. Nov 2006. *Extended CWI method used with the new item pool of ACCUPLACER*. The 2005 - 2006 Graduate Research Grant Award Meeting at College Board, NY.
32. Jan 2006. *Making ACCUPLACER more accurate and efficient*. The 2004 - 2005 Graduate Research Grant Award Meeting at College Board, NY.

Referred Conference Presentations (*: Current/Former Graduate Student as First Author)

- Reboucus, D.*. & **Cheng, Y.** (2017, Oct). *Investigating item characteristics and DIF in MIMIC*. 2017 Ideas in Testing Seminar, Chicago, IL.
- Yu, X. & **Cheng, Y.** (2017, Sept) *Using response time to detect speededness based on CUSUM*. 2017 Ideas in Testing Seminar, Chicago, IL.
- Hong, M.,* & **Cheng, Y.** (2017, Sept). *Data quality in assessment*. 2017 Conference on Test Security, Madison, WI.
- Yu, X. & **Cheng, Y.** (2017, Sept) *Using change point analysis to detect inattentiveness in polytomous survey response data*. 2017 Conference on Test Security, Madison, WI.
- Brodersen, A.*, & **Cheng, Y.** (2017, Sept). *Modeling item sharing for high-stakes tests: An epidemiological perspective*. 2017 Conference on Test Security, Madison, WI.
- Brodersen, A.*, & **Cheng, Y.** (2017, July). *Modified parallel analysis for data with planned missingness*. International Meeting of Psychometric Society, Zurich, Switzerland.
- Cheng, Y.** (2017, July) *Statistical quality control in psychometrics*. International Meeting of Psychometric Society, Zurich, Switzerland.

Whitney, B.*, & **Cheng, Y.** (2017, July). *An Examination of the Individual Differences Of and Between Passive and Active Procrastination*. The 10th International Conference on Procrastination, Chicago, IL.

Brodersen, A.*, & **Cheng, Y.** (2017, April). *Impact of item pre-knowledge on measurement outcomes in computerized adaptive testing*. Annual Meeting of National Council for Measurement in Education, San Antonio, TX.

Shao, C.* & **Cheng, Y.** (2017, April) *Detection of Test Speededness Using Change-Point Analysis with Response Time Data*. Annual Meeting of National Council for Measurement in Education, San Antonio, TX.

Cheng, Y., & Hong, M.* (2016, Oct). *The effect of random guessing on reliability and validity*. Ideas in Testing Seminar, Chicago, IL.

Shao, C.*, & **Cheng, Y.** (2016, Oct). *Detection of test speededness using change-point analysis with response time data*. Ideas in Testing Seminar, Chicago, IL.

Brodersen, A.*, & **Cheng, Y.** (2016, July). *The impact of item pre-knowledge on measurement outcomes of CAT*. International Meeting of Psychometric Society, Asheville, NC.

Reboucus, D.*. & **Cheng, Y.** (2016, April). *Handling missing data on DIF detection under the MIMIC model*. Annual Meeting of National Council for Measurement in Education, Washington DC.

Shao, C.*, & **Cheng, Y.** (2016, April). *A procedure to improve item parameter estimation in presence of test speededness*. Annual Meeting of National Council for Measurement in Education, Washington DC.

Cheng, Y., & Liu, C (2016, April). *The relationship between pass rat and multiple attempts on a test*. Annual Meeting of National Council for Measurement in Education, Washington DC.

Cheng, Y., & Liu, C (2015, November). *Classification accuracy of a test battery under multiple decision rules*. Ideas in Testing Conference, Chicago, IL.

Liu, C, & **Cheng, Y.** (2015, July). *Cognitive diagnostic assessments using support vector machine – a simulation study*. 2015 International Meeting of Psychometric Society, Beijing, China.

Liu, C, & **Cheng, Y.** (2015, April). *The use of support vector machine in cognitive diagnostic assessments*. 2015 NCME annual Meeting, Chicago, IL.

Narvaez, D., Wang, L., **Cheng, Y.**, Gleason, T, & Burke, J. (2015, Mar). *The importance of early life touch for psychosocial and moral development*. 2015 SRCD Biennial Meeting, Philadelphia, PA.

Kurth, A., Narvaez, D., Wang, L., **Cheng, Y.**, Gleason, T., & Burke, J. (2015, Mar). *Maternal positive and negative touch behaviors longitudinally predict temperament and social-emotional delays*. 2015 SRCD Biennial Meeting, Philadelphia, PA.

Jean-Pierre, P., Shao, C., & **Cheng, Y.** (2015, Mar.). *Patient satisfaction with interpersonal relationship with navigators: Item response theory analysis in a multicultural sample of 751 cancer patients*. 2015 International Convention of Psychological Sciences (ICPS), Amsterdam, The Netherlands.

Shao, C.*, Li, J., & **Cheng, Y.** (2014, Nov). *Detection of speeded responses in linear tests based on change-point analysis*. 2014 Ideas in Testing Seminar, Chicago, IL.

Shao, C. *, Kim, D., **Cheng, Y.** & Luo, X. (2014, Oct.) *A Change point-detection based method for warm-up effect detection in computerized adaptive testing*. 2014 Meeting of International Association for Computerized Adaptive testing, Princeton, NJ.

Cheng, Y., & Patton, J. M. (2014, May). *Detection and treatment of careless responses in survey data*. Poster at the annual convention of the Association for Psychological Science, San Francisco, CA.

Cheng, Y., Behrens, J., & Diao, Q. (2014, April). *Response time in computerized adaptive testing*. 2014 Meeting of National Council of Measurement in Education, Philadelphia, PA.

Shao, C. *, **Cheng, Y.** & Lathrop, Q. (2014, April.) *Anchors selection embedded mediated MIMIC model for understanding DIF mechanism[◇]*. 2014 American Educational Research Association Division D Research Gala. **◇ Best paper award**

Narvaez, D., Lawrence, A., **Cheng, Y.**, & Wang, L. (2013, Oct). *Adult reports of parenting they received relates to different types of moral orientations*. The 39th annual meeting of the Association for Moral Education, Montreal, Canada.

Cheng, Y. & Shao, C. (2013, July). *The mediated MIMIC model for understanding the underlying mechanism of DIF*. 2013 APA Convention, Honolulu, HI.

Shao, C. *, Jean-Pierre, P., **Cheng, Y.**, Paskett, E., & Fiscella, K. (2013, June). *Latent trait examination of the patient satisfaction with interpersonal relationship with navigator scale: An item response theory analysis approach*. MASCC/ISOO International Symposium on Supportive Care in Cancer. Berlin, Germany.

Jean-Pierre, P., **Cheng, Y.**, Patierno, S., Raich, P., ... & Fiscella, K. (2013, April). *Item response theory analysis of the patient satisfaction with cancer-related care measure: Psychometric validation in a multicultural sample of 1,296 participants*. American Association for Cancer Research, Washington, DC.

Cheng, Y. (2013, April). *Detection of aberrant responses in survey data in the presence of calibration error*. National Council of Measurement in Education, San Francisco, CA.

Lathrop, Q.*, Shao, C., Patton, J., & **Cheng, Y.** (2013, April). *Determining the anchor set in the detection of differential item functioning*. National Council of Measurement in Education, San Francisco, CA.

Narvaez, D., Gleason, T., **Cheng, Y.**, Lefever, J., & Wang, L. (2013, April). How Do Nurturing Parenting Attitudes Influence Moral Character Development and Flourishing? 2013 SRCD Biennial Meeting, Seattle, WA.

Heitzmann, C.A.*, Merluzzi, T.V., Philip, E.J.*, Patton, J.*, & **Cheng, Y.** (2012, Nov). *A comprehensive methodology for assessing true differences in coping for African American patients with cancer*. International Psycho-oncology Society, Brisbane, Queensland, Australia.

Shao, C*., & **Cheng, Y.** (2012, Oct). *The mediated MIMIC model for understanding the underlying mechanism of DIF*. Ideas in Testing conference, Chicago, IL.

Lathrop, Q*., & **Cheng, Y.** (2012, Oct). *Random effect Rasch model and the two parameter logistic model*. Ideas in Testing conference, Chicago, IL.

Cheng, Y. (2012, Sept.) *The theoretical development and applications of computerized adaptive testing*. 2012 Cross-strait Psychometric Conference, Nanchang, China.

Cheng, Y., & Liu, C. (2012, April). *Conceptual differences between two IRT-based decision-making approaches in testing*. 2012 meeting of NCME, Vancouver, BC.

Patton, J.*, & **Cheng, Y.** (2012, April). *Standard error estimation in presence of calibration error*. 2012 meeting of NCME, Vancouver, BC.

Lathrop, Q.*, & **Cheng, Y.** (2012, April). *Comparison between two IRT-based approaches in estimating classification accuracy and consistency*. 2012 meeting of NCME, Vancouver, BC.

Lathrop, Q.*, Wang, P., & **Cheng, Y.** (2012, April). *Estimation of classification accuracy and consistency with longitudinal data*. 2012 meeting of AERA, Vancouver, BC.

Cheng, Y., Patton, J., & Yuan, K-H. (2011, Oct). *Standard error estimation in IRT ability recovery*. Innovation R&D Symposium, CTB/McGraw-Hill, Monterey, CA.

Cheng, Y., & Liu, C. (2011, July). *Decision making in testing using IRT*. 2011 International Meeting of Psychometric Society, Hong Kong.

Frey, A., **Cheng, Y.,** & Seitz, N. (2011, May). *Content Balancing with the Maximum Priority Index Method in Multidimensional Adaptive Testing*. Presented at the 2011 NCME, New Orleans, LA.

Yao, L., Kyoto, I. & **Cheng, Y..** (2011, May). *Pre-Conference Training Workshop: An Introduction to the Application of BMIRT and LinkMIRT: Bayesian Multivariate Item Response Theory Software*. 2011 meeting of NCME, New Orleans, LA.

Narvaez, D., Brooks, J.A., Gleason, T., Wang, L., **Cheng, Y.,** Lefever, J., & Centers for the Prevention of Child Neglect (April, 2011). *Child Outcome Effects of the Environment of Evolutionary Adaptedness: Breastfeeding Experience and Touch at 30 and 36 months*. 2011 Meeting of Society for Research in Child Development (SRCD), Montreal, Canada.

Heitzmann, C.A.*, Patton, J.M*., Merluzzi, T., **Cheng, Y..** (2011, April). *Identifying true differences in coping self-efficacy between African American and white cancer patients*. Paper presented at the annual meeting of the Society of Behavioral Medicine, Washington, DC.

Narvaez, D., Wang, L., **Cheng, Y.,** Burke, J., & Gleason, T. (November, 2010). *Symposium: Early Life Experience and Social and Moral Development*. Association for Moral Education Annual Meeting, St. Louis.

Frey, A., **Cheng, Y.,** & Seitz, N. (2010, June). *Content Balancing with the Maximum Priority Index Method in Multidimensional Adaptive Testing*. Presented at the 2010 Annual Meeting of International Association on Computerized Adaptive Testing, Arnhem, the Netherlands.

Cheng, Y. (2010, May). *To Obtain More Precise Latent-Trait Estimates: Quantification of the Impact of Fallible Item Parameter Estimates on Latent Trait Recovery*. Presented at the 2010 Annual Meeting of the American Educational Research Association, Denver, CO.

Cheng, Y. (2010, May). *How to Retain Information in Educational and Psychological Assessments Relations Among Three Reliability Measures*, Presented at the 2010 Annual Meeting of the National Council on Measurement in Education, Denver, CO.

Cheng, Y. (2009, April). *Continuous/Virtual α -Stratification for Computerized Adaptive Testing*. Presented at the 2009 Annual Meeting of the American Educational Research Association, San Diego, CA.

Cheng, Y. (2008, September). *Diagnostic Computerized Adaptive Testing*. Presented at the 2008 International Conference on Outcome Measurement, Bethesda, MD.

Cheng, Y., & Morgan, D. (2008, March). *Comparison of methods for constrained CAT item selection in classification accuracy and consistency*. Presented at the 2008 Annual Meeting of the National Council on Measurement in Education, New York, NY.

Cheng, Y., & Chang, H. (2008, March). *A new heuristic for parallel form assembly based on information curve matching*. Presented at the 2008 Annual Meeting of the National Council on Measurement in Education, New York, NY.

Cheng, Y., & Chang, H. (2007, July). *The "selection and allocation" method for automated test assembly*. International Meeting of Psychometric Society, Tokyo, Japan.

Cheng, Y., Chang, H., & Budescu, D. (2007, June). *Item selection in cognitive diagnostic CAT*. GMAC Computerized Adaptive Testing Conference, Minneapolis, MN.

Cheng, Y., Chang, H. & Budescu, D. (2007, April). *The dual information method for item selection in cognitive diagnostic CAT*. Annual Meeting of the National Council on Measurement in Education, Chicago, IL.

Cheng, Y., & Chang, H. (2007, April). *Two item selection methods in computerized adaptive testing for cognitive diagnosis*. Annual Meeting of the American Educational Research Association, Chicago, IL.

Cheng, Y., & Chang, H. (2006, April). *Constraints-weighted information method for item selection of severely constrained computerized adaptive testing*. Annual Meeting of the National Council on Measurement in Education, SF, CA.

Cheng, Y., & Chang, H. (2006, April). *IRT pre-equating with a college admission test: A real data analysis*. Paper presented at the 2006 annual meeting of the American Educational Research Association, SF, CA.

Cheng, Y., & Chang, H. (2005, April). *Customized stratification in CAT: How many strata to use?* Annual Meeting of the National Council on Measurement in Education, Montreal, Canada.

Chang, H., Chen, P., **Cheng, Y.**, & Qian, J. (2005, April). *Adjustment of BIB data for DIF testing*. Annual Meeting of the American Educational Research Association, Montreal, Canada.

Cheng, Y., Chang, H., & Yi, Q. (2004, June). *Item selection with realistic content balancing constraints in computerized adaptive testing*. International Meeting of Psychometric Society, Pacific Grove, CA.

Professional Services

1. Reviewer for journals:

American Psychologist

Applied Psychological Measurement

Behavioral Research Methods

British Journal of Mathematical and Statistical Psychology

Educational and Psychological Measurement

Educational Measurement: Issues and Practices

Journal of the American Statistical Association

Journal of Educational and Behavioral Statistics

Journal of Mathematical Psychology

Journal of Educational Psychology

Journal for Research in Mathematics Education

Multivariate Behavioral Research

Psychological Methods

Psychometrika

Quality of Life Research

The Journal of Computerized Adaptive Testing

Reviewer for conferences:

American Educational Research Association

National Council of Measurement in Education

International Meeting of Psychometric Society

International Association of Computerized Adaptive Testing

2. Organizer, Invited symposium at the 2011 International Association of Computerized Adaptive Testing (IACAT, Sept 2011);
Organizer, symposium at the 2013 meeting of the National Council of Measurement in Education (NCME, April 2013).
3. Committee member of the Graduate Student Council (2005, 2006) of AERA Division D;
Committee member of the Dissemination Award Committee (2007, 2008) of NCME;
Committee member of the Significant Contribution to Educational Measurement and Research Methodology Award Committee (2011, 2012) of AERA Division D;
Committee member, Co-Chair, Chair (2014, 2015, 2016), Bradley Hanson Award for Contributions to Educational Measurement, National Council of Measurement in Education
4. National Science Foundation DRK-12 panel member, 2018
National Science Foundation DRK-12 panel member, 2016.
National Science Foundation ECR panel member, 2015.
National Science Foundation DRL panel member, 2014.
National Science Foundation REESE panel member, 2010 & 2011.
National Science Foundation SBE reviewer, 2012.
5. University services:
University Online Data Science program, 2016 – 2017
Department Executive Committee, 2015 - present
PIER program, Institute of Educational Initiatives, 2014 - present
Grant committee, Department of Psychology, 2014;
Undergraduate committee, Department of Psychology, Fall 2009 –2012;
Colloquium committee, Department of Psychology, Fall 2008 – Fall 2009.