

# Li Cai, PhD

*Ignoramus, in hoc signo laboremus*

## Professional History

- 7/2008–6/2011 **Assistant Professor**, *Advanced Quantitative Methodology*.  
Graduate School of Education and Information Studies, UCLA
- 7/2009–6/2011 **Assistant Professor**, *Quantitative Psychology*, Joint Appointment.  
Department of Psychology, UCLA
- 5/2011– **Faculty Affiliate**.  
Center for Health Statistics, University of Chicago
- 7/2011– **Associate Professor**, *Advanced Quantitative Methodology*.  
Graduate School of Education and Information Studies, UCLA
- 7/2011– **Associate Professor**, *Quantitative Psychology*, Joint Appointment.  
Department of Psychology, UCLA

## Education

- 6/2001 **B.A.**, *Business Communication*, Nanjing University.  
(With High Distinction)  
International Finance Minor
- 6/2003 **M.A.**, *Journalism and Communication*, The Ohio State University.  
Thesis: *Assessing co-termination in the unitizing phase of content analysis: A multi-response randomized blocks permutation approach*
- 12/2006 **M.S.**, *Mathematical Statistics*, University of North Carolina.  
Thesis: *Full-information item factor analysis by Markov chain Monte Carlo stochastic approximation*
- 8/2008 **Ph.D.**, *Quantitative Psychology*, University of North Carolina.  
Dissertation: *A Metropolis-Hastings Robbins-Monro algorithm for maximum likelihood non-linear latent structure analysis with a comprehensive measurement model*

## Publications on Statistics and Quantitative Methodology

MacCallum, R. C., Browne, M. W., & **Cai, L.** (2006). Testing differences between nested covariance structure models: Power analysis and null hypotheses. *Psychological Methods*, *11*, 19–35.

**Cai, L.** (2006). Multi-response permutation procedure as an alternative to the analysis of variance: An SPSS implementation. *Behavior Research Methods*, *38*, 51–59.

Maydeu-Olivares, A., & **Cai, L.** (2006). A cautionary note on using  $G^2(\text{dif})$  to assess relative model fit in categorical data analysis. *Multivariate Behavioral Research*, *41*, 55–64.

Hayes, A. F., & **Cai, L.** (2007). Further evaluating the validity of the conditional decision rule for comparing two independent means. *British Journal of Mathematical and Statistical Psychology*, *60*, 217–244.

**Cai, L.**, & Hayes, A. F. (2008). A new test of linear hypotheses in OLS regression under heteroscedasticity of unknown form. *Journal of Educational and Behavioral Statistics*, *33*, 21–40.

Hayes, A. F., & **Cai, L.** (2008). Using heteroscedasticity-consistent standard error estimators in OLS regression: An introduction and software implementation. *Behavior Research Methods*, *39*, 709–722.

**Cai, L.** (2008). SEM of another flavour: Two new applications of the supplemented EM algorithm. *British Journal of Mathematical and Statistical Psychology*, *61*, 309–329.

Bauer, D. J., & **Cai, L.** (2009). Consequences of unmodeled nonlinear effects in multilevel models. *Journal of Educational and Behavioral Statistics*, *34*, 97–114.

**Cai, L.**, & Lee, T. (2009). Covariance structure model fit testing under missing data: An application of the supplemented EM algorithm. *Multivariate Behavioral Research*, *44*, 281–304.

**Cai, L.** (in press). Review of Borkar's (2008) *Stochastic Approximation: A Dynamical Systems Viewpoint*. *Journal of Educational and Behavioral Statistics*.

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## Publications on Educational and Psychological Measurement

**Cai, L.**, Maydeu-Olivares, A., Coffman, D. L., & Thissen, D. (2006). Limited-information goodness-of-fit testing of item response theory models for sparse  $2^p$  tables. *British Journal of Mathematical and Statistical Psychology*, *59*, 173–194.

Curran, P. J., Hussong, A. M., **Cai, L.**, Huang, W., Chassin, L., Sher, K. J., & Zucker, R. A. (2008). Pooling data from multiple prospective studies: The role of item response theory in integrative analysis. *Developmental Psychology*, *44*, 365–380.

**Cai, L.** (2010). High-dimensional exploratory item factor analysis by a Metropolis-Hastings Robbins-Monro algorithm. *Psychometrika*, *75*, 33–57.

**Cai, L.** (2010). Metropolis-Hastings Robbins-Monro algorithm for confirmatory item factor analysis. *Journal of Educational and Behavioral Statistics*, *35*, 307–335.

**Cai, L.** (2010). A two-tier full-information item factor analysis model with applications. *Psychometrika*, *75*, 581–612.

Reise, S., Preston, K., **Cai, L.**, & Hays, R. D. (2011). Using the nominal response model to evaluate response category discrimination in the PROMIS emotional distress item pools. *Educational and Psychological Measurement*, *71*, 523–550.

Maydeu-Olivares, A., **Cai, L.**, & Hernandez, A. (in press). Comparing the fit of IRT and factor analysis models. *Structural Equation Modeling*.

**Cai, L.**, Yang, J. S. & Hansen, M. (in press). Generalized full-information item bifactor analysis. *Psychological Methods*.

Swartz, R. J., Schwartz, C., Basch, E., **Cai, L.**, Fairclough, D. L., McLeod, L., Mendoza, T., & Rapkin, B. (in press). The King's Foot of patient-reported outcomes: Current practices and new developments for the measurement of change. *Quality of Life Research*.

Yang, J. S., Hansen, M., & **Cai, L.** (in press). Characterizing sources of uncertainty in IRT scale scores. *Educational and Psychological Measurement*.

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## Publications on Substantive Topics

Ennett, S. T., Bauman, K. E., Hussong, A., Faris, R., Foshee, V. A., DuRant, R., & **Cai, L.** (2006). The peer context of adolescent substance use: Findings from social network analysis. *Journal of Research on Adolescence*, *16*, 159–186.

David, P., Lu, T., Kline, S., & **Cai, L.** (2007). Social effects of an anthropomorphic help agent: The fairness of man and machine. *Cyber Psychology and Behavior*, *10*, 471–474.

Ennett, S. T., Faris, R., Hipp, J., Foshee, V. A., Bauman, K. E., Hussong, A. M., & **Cai, L.** (2008). Peer smoking, other peer attributes, and adolescent cigarette smoking: A social network analysis. *Prevention Science*, *9*, 88–98.

Hussong, A. M., **Cai, L.**, Curran, P. J., Flora, D. B., Chassin, L. A., & Zucker, R. A. (2008). Disaggregating the distal, proximal, and time-varying effects of parent alcoholism on children's internalizing symptoms. *Journal of Abnormal Child Psychology*, *36*, 335–346.

Ennett, S. T., Foshee, V. A., Bauman, K. E., Hussong, A. M., Faris, R., Hipp, J., **Cai, L.**, et al. (2008). The social ecology of adolescent alcohol misuse. *Child Development*, *79*, 1777-1791.

Ennett, S. T., Foshee, V. A., Bauman, K. E., Hussong, A. M., Faris, R., Hipp, J., **Cai, L.**, et al. (in press). A social contextual analysis of youth cigarette smoking development. *Nicotine & Tobacco Research*

Cole, D. A., **Cai, L.**, Martin, N. C., Findling, R. L., Youngstrom, E. A., Garber, J., Curry, J. F., Hyde, J. S., Essex, M. J., Compas, B. E., Goodyer, I. M., Rohde, P., Stark, K. D., Slattery, M. J., Forehand, R. (in press). Structure and measurement of depression in youth: Applying item response theory to clinical data. *Psychological Assessment*

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## Book Chapters

Preacher, K. J., **Cai, L.**, & MacCallum, R. C. (2007). Alternatives to traditional model comparison strategies for covariance structure models. In T. D. Little, J. A. Bovaird, & N. A. Card (Eds.), *Modeling contextual effects in longitudinal studies* (pp. 33–62). Mahwah, NJ: Lawrence Erlbaum Associates.

MacCallum, R. C., Browne, M. W., & **Cai, L.** (2007). Factor analysis models as approximations: some history and some implications. In R. Cudeck & R. C. MacCallum (Eds.), *Factor analysis at 100: Historical developments and future directions* (pp. 153–175). Mahwah, NJ: Lawrence Erlbaum Associates.

Thissen, D., **Cai, L.**, & Bock, R. D. (2010). The nominal categories item response model. In M. L. Nering & R. Ostini (Eds.), *Handbook of polytomous item response theory models: Development and applications* (pp. 43–75). New York, NY: Taylor & Francis.

Lee, T., **Cai, L.**, & MacCallum, R. C. (in press). Power analysis for tests of structural equation models. In R. Hoyle, D. Kaplan, G. Marcoulides, & S. West (Eds.), *Handbook of structural equation modeling*. New York, NY: Guilford.

**Cai, L.** (in press). Factor analysis of tests and items. In Geisinger, K. F. (Ed.), *APA Handbook of Testing and Assessment in Psychology*. Washington, DC: American Psychological Association.

**Cai, L.** (in press). Three cheers for the asymptotically distribution free theory of estimation and inference: Some recent applications in linear and nonlinear latent variable modeling. In MacCallum, R. C. & Edwards, M. C. (Ed.), *Current Topics in the Theory and Application of Latent Variable Models*. New York, NY: Taylor & Francis.

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## Computer Software

**Cai, L.**, du Toit, S. H. C., & Thissen, D. (forthcoming in 2011). *IRTPRO: Flexible, multidimensional, multiple categorical IRT modeling*. Chicago, IL: Scientific Software International.

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## Awards and Honors

- 1998, 1999 **University Scholarship**, *Nanjing University*.
- 1999 **Best Non-Native English Speaker**, *The English-Speaking Union*, International English Public Speaking Competition, London, Britain.
- 1999 **First Prize**, *China Daily*, National College English Public Speaking Competition.
- 1999 **University President's Special Scholarship**, *Nanjing University*.
- 2000 **Guang-Hua Scholarship**, *Nanjing University*.
- 2003 **Elected to Kappa Tau Alpha**, National Honor Society of Journalism & Mass Communication.
- 2003 **Research Award**, *Kappa Tau Alpha*, National Honor Society of Journalism & Mass Communication.
- 2003 **Chaffee-McLeod Award**, *Association for Education in Journalism & Mass Communication*, Communication Theory & Methodology Division.  
Best student paper in the open paper competition
- 2006 **Lyle V. Jones Award**, *L. L. Thurstone Psychometric Laboratory*.  
Annual award to one graduate student for outstanding scholarship and citizenship in the Thurstone Psychometric Laboratory at UNC-Chapel Hill

- 2007-2008 **Gulliksen Psychometric Research Fellowship**, *Educational Testing Service*.  
A competitive year-long research fellowship awarded by the ETS
- 2008 **Dean's Distinguished Dissertation Award**, *University of North Carolina*.  
For best dissertation research in social, behavioral, and economic sciences
- 2009 **AERA Outstanding Quantitative Dissertation Award**, *American Educational Research Association*.  
For best dissertation in educational measurement and methodology
- 2009 **NCME Brenda H. Loyd Outstanding Dissertation Award**, *National Council on Measurement in Education*.  
The award honors an outstanding dissertation in educational measurement.
- 2010 **Outstanding Reviewer Award**, *American Educational Research Association*.  
For outstanding service to *Journal of Educational and Behavioral Statistics*
- 2011 **Anne Anastasi Early Career Award**, *American Psychological Association*.  
For outstanding contributions and promise of continued work of outstanding quality to Division 5 areas (Evaluation, Measurement, and Statistics).

## Extramural Research Support

- 2007-2008 **National Science Foundation**, *SES-0717941*.  
Title: *A Metropolis-Hastings Robbins-Monro Algorithm for Maximum Likelihood Confirmatory Item Factor Analysis*  
Role: Co-PI (MacCallum, PI, UNC-Chapel Hill; \$7,000 direct cost)
- 2008-2013 **Institute of Education Sciences**, *R305B080016*.  
Title: *Doctoral Training Program in Advanced Quantitative Methods in Education Research*  
Role: Core Faculty (Webb, PI, UCLA; \$4.2 million direct cost)
- 2010-2013 **Institute of Education Sciences**, *R305D100039*.  
Title: *Nonlinear Multilevel Latent Variable Modeling with a Metropolis-Hastings Robbins-Monro Algorithm*  
Role: PI (\$669,132 direct cost)
- 2009-2014 **National Institute on Drug Abuse**, *R01DA026943*.  
Title: *Development and Evaluation of a Smoking Module for PROMIS*  
Role: PI of UCLA Subaward (Edelen, PI, RAND; \$303,163 direct cost for UCLA subaward)
- 2010-2013 **National Institute on Drug Abuse**, *R01DA030466*.  
Title: *Measurement of Recovery from Drug Addiction*  
Role: PI (\$437,057 direct cost)

## Invited Talks and Conference Sessions

- November 2006 **Cai, L.** A Markov chain Monte Carlo stochastic approximation algorithm for item factor analysis. *Invited Session, Advances in Adaptive Quadrature Meeting, Center for Health Statistics, University of Illinois at Chicago, Chicago, IL.*
- November 2006 **Cai, L.** A Metropolis-Hastings Robbins-Monro algorithm for item factor analysis. *Quantitative psychology colloquium, Department of Psychology, The Ohio State University, Columbus, OH.*

- June 2007 **Cai, L.** A Metropolis-Hastings Robbins-Monro algorithm for maximum likelihood nonlinear latent structure analysis. *Invited Seminar, Research & Development Division, Educational Testing Service, Princeton, NJ.*
- September 2007 **Cai, L.** A Metropolis-Hastings Robbins-Monro algorithm for maximum likelihood nonlinear latent structure analysis. *Quantitative psychology colloquium, Department of Psychology, University of Notre Dame, Notre Dame, IN.*
- May 2008 **Cai, L.** A Metropolis-Hastings Robbins-Monro algorithm for maximum likelihood nonlinear latent structure analysis. *Invited Talk, Annual Convention of the Association for Psychological Science, Chicago, IL.*
- June 2008 **Cai, L.** Full information confirmatory item factor analysis with a Metropolis-Hastings Robbins-Monro algorithm. *Invited Session, The Second Patient Reported Outcomes Measurement Information System (PROMIS) Psychometric Summit, Evanston, IL.*
- July 2008 **Cai, L.** Stochastic approximation for maximum likelihood parameter estimation in nonlinear latent variable models. *Invited Symposium Contribution, 2008 International Meeting of the Psychometric Society, Durham, NH.*
- May 2009 **Cai, L.** Modern psychological measurement: New developments in item response theory. *Chair of Invited Symposium, Annual Convention of the Association for Psychological Science, San Francisco, CA.*
- May 2009 **Cai, L.** Flexible multidimensional, multiple categorical IRT modeling. *Invited Symposium Contribution, Annual Convention of the Association for Psychological Science, San Francisco, CA.*
- July 2009 **Cai, L.** Multidimensional IRT in longitudinal assessment of Patient Reported Outcomes. *Invited Session, Statistical and Applied Mathematical Sciences Institute, Summer Psychometric Program, Durham, NC.*
- September 2009 **Cai, L.** Some recent advances in multidimensional item response theory. *Invited Seminar, CCH/HSRC/EXPORT Methods Seminar, UCLA.*
- January 2010 **Cai, L.** Extended item factor analysis and its applications. *Biostatistics colloquium, Department of Biostatistics, UCLA.*
- Feb 2010 **Cai, L.** Contributions to CRESST conference on the psychometrics of games and simulations. *Invited Talk, National Center for Research on Evaluation, Standards, and Student Testing, UCLA.*
- Feb 2010 **Cai, L.** Introduction to item response theory in drug abuse research. *Invited Seminar, Center for Advancing Longitudinal Drug Abuse Research, UCLA.*
- May 2010 **Cai, L.** Bootstrapping methods for latent variable models. *Invited Symposium Contribution, Annual Convention of the Association for Psychological Science, Boston, MA.*
- July 2010 **Cai, L.** A two-tier full-information item factor analysis model with applications. *Invited State-of-the-Art Talk, 2010 International Meeting of the Psychometric Society, Athens, GA.*

- August 2010 **Cai, L.** Current development in multidimensional item response theory. *Invited Seminar, National Assessment of Educational Quality, Beijing Normal University, China.*
- September 2010 **Cai, L.** Three cheers for the asymptotically distribution free theory of estimation and inference: Some recent applications in latent variable modeling. *Invited Talk, Current Topics in the Theory and Application of Latent Variable Models: A Conference Honoring the Scientific Contributions of Michael W. Browne, Columbus, OH.*
- September 2010 **Cai, L.** Alternative multiple imputation inference for mean and covariance structure modeling. *Invited Seminar, Department of Psychology, University of Kansas.*
- September 2010 **Cai, L.** Longitudinal Item response theory and applications. *Invited Session, The Third Patient Reported Outcomes Measurement Information System (PROMIS) Psychometric Summit, Chicago, IL.*
- Jan 2011 **Cai, L.** A two-tier item factor analysis model with applications. *Invited Seminar, Department of Statistics, Department of Health Studies, and Committee on Education, University of Chicago, Chicago, IL.*
- April 2011 **Cai, L.** The role of item response theory in psychological data analysis. *Invited Seminar, Department of Psychology, Department of Human Development, University of Chicago, Chicago, IL.*
- July 2011 **Cai, L.** Lord-Wingersky algorithm after 25+ Years: Version 2.0 for hierarchical item factor models. *Invited Symposium Contribution, 2011 International Meeting of the Psychometric Society, Hong Kong, China.*
- July 2011 Hansen, M., & **Cai, L.** Limited-information goodness-of-fit testing of hierarchical item factor models. *Invited Symposium Contribution, 2011 International Meeting of the Psychometric Society, Hong Kong, China.*
- July 2011 Lee, M., Hansen, M., & **Cai, L.** Calibration, scaling, DIF, and projection: A common framework using multidimensional IRT. *Invited Symposium Contribution, 2011 International Meeting of the Psychometric Society, Hong Kong, China.*
- July 2011 Yang, J. S., Monroe, S., & **Cai, L.** A multilevel item bifactor model. *Invited Symposium Contribution, 2011 International Meeting of the Psychometric Society, Hong Kong, China.*
- July 2011 **Cai, L.** Multilevel and hierarchically multidimensional latent variable measurement models for item response modeling in large-scale assessments. *Invited Talk, Workshop on Modern Psychometric and Statistical Methods for Large Scale Education Assessments, Beijing Normal University, China.*
- August 2011 Edwards, M. C., & **Cai, L.** A new diagnostic procedure to detect departures from local independence in item response models. *Invited Symposium Contribution, Annual Convention of the American Psychological Association, Washington, DC.*
- August 2011 **Cai, L.** Second-generation, multidimensional, and multilevel item response theory modeling framework. *Invited Award Address, Annual Convention of the American Psychological Association, Washington, DC.*

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## Conference Presentations

- November 2002 Eveland, W. P., Eastin, M., Marton, K., Liu, K., & **Cai, L.** Non-response bias, context dependency, social desirability, and response set: An experimental comparison of web vs. telephone surveys. *Paper presented at the 2002 meeting of the Midwest Association for Public Opinion Research, Chicago, IL.*
- October 2002 David, P., Lu, T., & **Cai, L.** Computers as social actors: Testing the fairness of man and machine. *Paper presented at the Fifth Annual International Workshop, Presence 2002, Universidade Fernando Pessoa, Porto, Portugal.*
- May 2003 **Cai, L.**, David, P., Lu, T., Liu, K., Cortese, J., & Seo, M. Testing the boundaries of the Media Equation in a computer game situation: When an evaluation by a human means more than an evaluation by a computer. *Paper presented at the 2003 meeting of the International Communication Association, San Diego, CA.*
- August 2003 **Cai, L.** Assessing co-termination between coders in unitizing textual data: A Multi-response Randomized Blocks Permutation approach. *Paper presented at the 2003 meeting of the Association for Education in Journalism & Mass Communication, Kansas City, MO. (Top Student Paper).*
- May 2004 Eveland, W. P., Seo, M., Cortese, J., **Cai, L.**, Wang, Z., Thomson, T., Seitman, R., & Sipos, I. News use, discussion, and knowledge of local public affairs: An experimental and observational study. *Paper presented at the 2004 meeting of the International Communication Association, New Orleans, LA.*
- June 2004 MacCallum, R. C., Browne, M. W., & **Cai, L.** Testing differences between structural equation models: Power analyses and null hypotheses. *Paper presented at the 2004 International Meeting of the Psychometric Society, Monterey, CA.*
- October 2004 **Cai, L.** Limited information goodness-of-fit testing for latent variable models fitted to sparse  $2^P$  tables. *Paper presented at the 2004 Society of Multivariate Experimental Psychology graduate student pre-conference, Naples, FL.*
- April 2005 Pungello, E. P., Campbell, F. A., Burchinal, M. R., **Cai, L.**, Wasik, B. H., & Ramey, C. T. Early risk and educational intervention predicting to young adult outcomes within a high-risk population. *Paper presented at the 2005 biennial meeting of the Society for Research in Child Development, Atlanta, GA.*
- March 2006 Ennett, S. T., Foshee, V. A., Bauman, K. E., Hussong, A., Faris, R., Hipp, J., & **Cai, L.** The social context of adolescent substance use. *Paper presented at the 2006 biennial meeting of the Society for Research on Adolescence, San Francisco, CA.*
- June 2006 Thissen, D., **Cai, L.**, & Bock, R. D. A new parameterization of the nominal item response model. *Paper presented at the International Meeting of the Psychometric Society, Montréal, Canada.*
- June 2006 **Cai, L.** SEM of another flavor: Two new applications of the supplemented EM algorithm. *Paper presented at the 2006 International Meeting of the Psychometric Society, Montréal, Canada.*
- October 2006 **Cai, L.** Full-information item factor analysis by Markov chain Monte Carlo stochastic approximation. *Paper presented at the 2006 Society of Multivariate Experimental Psychology graduate student pre-conference, Lawrence, KS.*

- February 2007 Curran, P. J., Hussong, A. M., **Cai, L.**, & Huang, W. The integrative analysis of three data sets: Internalizing symptomatology from ages 10 to 33. *Paper presented at the 2007 meeting of the Conference on Emerging Adulthood, Tucson, AZ.*
- July 2008 **Cai, L.**, & Thissen, D. Implementation of a Supplemented EM algorithm to compute the error covariance matrix for ML parameter estimates in item response theory models. *Paper presented at the 2008 International Meeting of the Psychometric Society, Durham, NH.*
- April 2010 Yang, J. S., Hansen, M., & **Cai, L.** Characterizing sources of uncertainty in IRT scale scores. *Paper presented at the 2010 Meeting of the National Council on Measurement in Education, Denver, CO.*
- April 2010 **Cai, L.**, Yang, J. S. & Hansen, M. Generalized full-information item bifactor analysis. *Paper presented at the 2010 Meeting of the National Council on Measurement in Education, Denver, CO.*
- April 2010 **Cai, L.** On the shape of likelihood surface in item factor analysis. *Paper presented at the 2010 Meeting of the American Educational Research Association, Denver, CO.*
- July 2010 Hansen, M., **Cai, L.**, & Yang, J. S. Alternative bifactor model specifications: Estimation, diagnosis, and consequences of model choice. *Paper presented at the 2010 International Meeting of the Psychometric Society, Athens, GA.*
- July 2011 Lee, T., **Cai, L.** A poor person's posterior predictive checking of structural equation models. *Paper presented at the 2011 International Meeting of the Psychometric Society, Hong Kong, China.*
- July 2011 Edwards, M. C., Houts, C. R., **Cai, L.** A new procedure for detecting departures from local independence in item response models. *Paper presented at the 2011 International Meeting of the Psychometric Society, Hong Kong, China.*

## Teaching

- Winter 2009 EDUC 231B Factor Analysis  
3.0/3.0 student course rating: 1=unsatisfactory; 2=satisfactory; 3=excellent
- Spring 2009 EDUC M231E (STAT M244) Latent Variable Modeling  
2.6 student course rating
- Spring 2009 EDUC 255C Seminar on Item Response Theory  
2.8 student course rating
- Fall 2009 EDUC 231A Toolkit for Quantitative Methods Research  
2.4 student course rating
- Winter 2010 EDUC 231B Factor Analysis  
2.3 student course rating
- Winter 2010 EDUC 255C Computational Statistics  
2.7 student course rating
- Fall 2010 EDUC 231E (STAT M244) Latent Variable Modeling  
2.3 student course rating
- Fall 2010 EDUC 231A Toolkit for Quantitative Methods Research  
2.4 student course rating

Winter 2011 EDUC 211C Advanced Item Response Theory  
2.7 student course rating

## Professional Activities

- editorial board Communication Methods and Measures (2011-)  
Journal of Educational and Behavioral Statistics (2011-)
- ad hoc reviewer American Educational Research Association Annual Meeting (Division D)  
The American Statistician  
Applied Psychological Measurement  
Behavior Research Methods  
Biometrics  
British Journal of Mathematical and Statistical Psychology  
Computational Statistics and Data Analysis  
Educational and Psychological Measurement  
Human Communication Research  
Methodology  
Multivariate Behavioral Research  
National Council on Measurement in Education Annual Meeting  
National Institutes of Health  
National Science Foundation  
Psychometrika  
Psychological Methods  
Quality of Life Research  
Society for Research on Educational Effectiveness Meeting  
Sociological Methodology
- affiliations American Educational Research Association  
American Statistical Association  
Association for Psychological Science  
National Council on Measurement in Education  
Psychometric Society  
Society of Multivariate Experimental Psychology
- service AERA Division D Dissertation Award Committee (2010-2013)  
NCME Annual Awards Committee (2011-2014)  
Education Department Academic Personnel Committee (2009-2011)  
GSE&IS Faculty Executive Committee (2010-2012)  
Faculty advisory committee for UCLA ATS statistical consulting group (2009-)