

PRATHIBA NATESAN BATLEY

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Professor

University of Louisville

pnbatley@gmail.com

AREAS OF EXPERTISE

- Bayesian Statistics, Statistical Simulation-based Approaches
- Single-case Designs (e.g. *n-of-1* designs)
- Latent Variable Models: Item Response Theory (IRT), Structural Equation Models

EDUCATION

Institution	Major	Degree	Date
University of Madras India	Architecture (Honor Roll)	B. Arch	2001
Texas A&M University	Construction Management	M.S.	2003
Texas A&M University	Major: Statistics and Measurement Department of Curriculum and Instruction	Ph.D.	2007

Professional experience

Year	Institution	Title
2022-present	University of Louisville	Acting Associate Dean for Faculty Excellence
2021-present	University of Louisville	Professor
2020-2021	Brunel University London	Senior Lecturer
2020	University of North Texas	Professor
2016	Oxford University	Visiting Scholar
2015	Institute of Policy Research Northwestern University	Research Fellow
2014 – 2020	Department of Educational Psychology University of North Texas	Associate Professor
2014 – 2017	Office of Research Consulting University of North Texas	Director
2009 – 2014	Department of Educational Psychology University of North Texas	Assistant Professor
2008 – 2009	Department of Educational & Psychological Studies Florida International University	Visiting Assistant Professor
2007 – 2008	Department of Educational & Psychological Studies University of Miami	Visiting Assistant Professor
2002 – 2007	Department of Teaching, Learning & Culture Texas A&M University	Graduate Assistant

Publications

Published/In Press

- *Co-authored with students, ** first and second authors contributed equally to the manuscript
- * Caldas, S., Fondren, A., Natesan Batley, P., & Contractor, A. A. (2022). Longitudinal relationships among posttraumatic stress disorder symptom clusters in response to positive memory processing. *Journal of Behavior Therapy and Experimental Psychiatry*, 76, 1-10. <https://doi.org/10.1016/j.jbtep.2022.101752> IF: 2.1
- Natesan Batley, P. (Forthcoming). Bayesian analysis of single case experimental design count data in trauma research: A tutorial. *Psychological Trauma: Theory, Research, Practice, and Policy*. IF: 4.218
- *, ** Natesan Batley, P., Contractor, A. A., Compton, S. E., Sharma, R., & Dranger, P. (Forthcoming). Evaluation of the PTSD checklist for DSM-5 across different cultural groups: An item response theory analyses using the graded response model. *Psychological Trauma: Theory, Research, Practice, and Policy*. IF: 4.218
- *Jin, L., Sharma, R., Hall, B. J., Natesan Batley, P., Alghraibeh, A. M., Aljomaa, S. S., & Contractor, A. A. (2022). Ethnic cultural value typologies and mental health parameters among Indians. *International Journal of Intercultural Relations*, 86, 95-108. <https://doi.org/10.1016/j.ijintrel.2021.11.008>. IF: 2.667.
- *Cloutier, R., Natesan Batley, P., Kearns, N. T., & Knapp, A. A. (2021). A psychometric evaluation of the marijuana problems index among college students: Confirmatory factor analysis and measurement invariance by gender. *Experimental and Clinical Psychopharmacology*. <https://doi.org/10.1037/pha0000531>. IF: 3.433
- *, ** Natesan Batley, P., Contractor, A.A., Weiss, N.H., Compton, S.E., & Price, M. (2021). Psychometric evaluation of the posttrauma risky behaviors questionnaire: Item response theory analyses. *Assessment*. <https://doi.org/10.1177/10731911211036760>. IF: 5.
- Natesan Batley, P. & Hedges L.-V. (2021). Accurate Model vs. Accurate Estimates: A Study of Bayesian Single-Case Experimental Designs. *Behavior Research Methods*, 53, 1782-1798. <https://doi.org/10.3758/s13428-020-01522-0>. IF: 7.023
- *, ** Natesan Batley, P., Nandakumar, R., Shrestha, P., & Palka, J. (2021). Comparing Bayesian unknown change-point model and simulation modeling analysis to test immediacy and treatment effect in single case experimental designs. *Frontiers in Psychology: Quantitative Psychology and Measurement*. <https://doi.org/10.3389/fpsyg.2020.617047>. IF: 2.99.
- *O'Bryant, M., Natesan Batley, P., & Onwuegbuzie, A. J. (2021). Validation and prediction of statistics anxiety using attitudes towards statistics courses. *SAGE: Open*. <https://doi.org/10.1177/21582440211001378>. IF: 1.577.
- *Natesan Batley, P., Contractor, A. A., & Caldas, S. (2020). Bayesian time-series models in single case experimental designs: A tutorial for trauma researchers. *Journal of Traumatic Stress*, 33, 1144-1153. DOI: <https://doi.org/10.1002/jts.22614>. IF: 1.926
- *Natesan Batley, P., Boedeker, P., & Onwuegbuzie, A. J. (2020). Adopting a meta-generative way of thinking in the field of education via the use of Bayesian methods: A multimethod approach in a post-truth and COVID-19 Era. *International Journal of Multiple Research Approaches*, 12, 4-19. DOI: <https://doi.org/10.29034/ijmra.v12n1editorial2>

- Boakye, K., Natesan, P., & Prybutok, V. R. (2020). A correlated uniqueness model of service quality measurement among users of cloud-based service platforms. *Journal of Retailing and Consumer Services*, 55. DOI: <https://doi.org/10.1016/j.jretconser.2020.102098>. IF: 3.585
- *Contractor, A. A., Weiss, N. H., Natesan Batley, P., & Elhai, J. (2020). Clusters of trauma types as measured by the life events checklist for DSM-5. *International Journal of Stress Management*. <https://doi.org/10.1037/str0000179> IF: 2.737.
- *Contractor, A. A., Weiss, N. H., Schick, M. R., Natesan Batley, P., Forkus, S. R., & Sharma, R. (2020). Comparison of latent typologies of posttraumatic stress disorder and depression symptoms across military personnel from India and the US. *Journal of Anxiety Disorders*, 70. DOI: <https://doi.org/10.1016/j.janxdis.2020.102195>. IF: 3.47
- Natesan Batley, P., Minka, T., & Hedges, L. V. (2020). Investigating immediacy in multiple phase-change single case experimental designs using a Bayesian unknown change-points model. *Behavior Research Methods*, 52, 1714-1728. DOI: <https://doi.org/10.3758/s13428-020-01345-z>. IF: 4.617
- Natesan Batley, P., Shukla Mehta, S. & Hitchcock, J. (2020). A Bayesian rate ratio effect size to quantify intervention effects for count data in single case experimental research. *Behavioral Disorders*. DOI: 10.1177/0198742920930704. IF: 1.343
- Natesan, P. (2019). Fitting Bayesian models for single-case experimental designs: A tutorial. *Methodology*, 15, 147-156. <https://doi.org/10.1027/1614-2241/a000180>. IF: 1.452
- *Frey-Clark, M., Natesan, P., & O'Bryant, M. (2019). Statistical anxiety among traditional and online students: Testing measurement invariance. *Frontiers in Psychology: Quantitative Psychology and Measurement*, 10, 1-7. DOI: <https://doi.org/10.3389/fpsyg.2019.01440>. IF: 2.089
- Natesan, P., Haddid, D., & Hitti, E. A. (2019). Comparing patients' and families' perceptions of satisfaction and predictors of overall satisfaction in a Lebanese emergency department. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0221087>. IF: 2.766
- *Contractor, A., Caldas, S. V., Dolan, M., Natesan, P., & Weiss, N. (2019). Invariance of the construct of posttraumatic stress disorder: A systematic review. *Journal of Traumatic Stress*, 32, 287-298. <https://doi.org/10.1002/jts.22389>. IF: 2.456.
- Natesan, P. (2019). Conceptualizing statistical simulation studies as multiple methods inquiry: A primer. *International Journal of Multiple Research Approaches*, 11, 77-89. DOI: <https://doi.org/10.29034/ijmra.v11n1a4>
- Natesan, P., Bakhti, R., El-Doueihi, P. Z., & Batley, N. J. (2018). Measuring ACGME Milestones and Competencies: Lessons learned and recommendations. *International Journal of Emergency Medicine*, 11, 39. <https://doi.org/10.1186/s12245-018-0198-3> SNIP: 0.932, SJR: 0.416, Citescore: 1.060.
- *Kearns, N. T., Blumenthal, H., Natesan, P., Zamboanga, B. L., Ham, L. S., & Cloutier, R. M. (2018). Development and initial psychometric validation of the brief - caffeine expectancies questionnaire (B-CaffEQ). *Psychological Assessment*. doi: 10.1037/pas0000614. IF: 4.107
- *,** Natesan, P., Mitchell, M., & Glover, R. (2018). Early predictors of child's bully and victim statuses: A longitudinal investigation using parent, teacher, and student reports from national

- data. *Frontiers in Education*, 3, 48. <https://doi.org/10.3389/feduc.2018.00048>.
- Onwuegbuzie, A., Hitchcock, J., Natesan, P., & Newman, I. (2018). Using fully integrated Bayesian thinking to address the 1 + 1 = 1 integration challenge. *International Journal of Multiple Research Approaches*, 10, 666-678. DOI: <https://doi.org/10.29034/ijmra.v10n1a43>
- *Ruckthongsook, W., Oppong, J., Tiwari, C., & Natesan, P. (2018). Threshold selection for adaptive kernel density estimation in disease mapping. *International Journal of Health Geographics*, 17, 10. DOI: 10.1186/s12942-018-0129-9. IF: 3.386
- Natesan, P. & Hedges, L. V. (2017). Bayesian unknown change-point models to investigate immediacy in single case designs. *Psychological Methods*, 22, 743-759. DOI: 10.1037/met0000134. IF: 10.315.
- *, **Turner, H. J., Natesan, P., & Henson, R. K. (2017). Performance evaluation of confidence intervals for ordinal coefficient alpha. *Journal of Modern Applied Statistical Methods*, 16, 157-185. DOI: 10.22237/jmasm/1509494940. SJF: 0.3. 21.9% Acceptance rate.
- Natesan, P., Nandakumar, R., Minka, T., & Rubright, J. (2016). Bayesian prior choice in IRT estimation using MCMC and variational Bayes. *Frontiers in Psychology: Quantitative Psychology and Measurement*, 7, 1-11. DOI: <https://doi.org/10.3389/fpsyg.2016.01422>. IF: 2.089
- *Natesan, P. & Aerts, Q. (2016). Can library users distinguish between minimum, perceived, and desired levels of service quality? Validating LibQUAL+® using multitrait multimethod analysis. *Library & Information Science Research*, 38, 30-38. DOI: <https://doi.org/10.1016/j.lisr.2016.01.004> IF: 1.886.
- Natesan, P. (2015). Comparing interval estimates for small sample ordinal CFA models. *Frontiers in Psychology: Quantitative Psychology and Measurement*, 6, 1599. DOI: <https://doi.org/10.3389/fpsyg.2015.01599>. IF: 2.089
- *Saylor, M. F., Boazman, J., Natesan, P., & Periathiruvadi, S. (2015). Subjective well-being of gifted American college students: An examination of psychometric properties of the PWI-A. *Gifted Child Quarterly*, 59, 236-248. DOI: <https://doi.org/10.1177/0016986215597748>. IF: 2.14
- *, ** Natesan, P., Ponce, H., & Chavez, A. (2015). Are LibQUAL+® and LibQUAL+® Lite scores psychometrically comparable? *Library & Information Science Research*, 37, 21-27. DOI: <https://doi.org/10.1016/j.lisr.2014.07.004>. IF: 1.886.
- *, ** Kalinowski, K., Natesan, P., & Henson, R. (2014). Stratified item selection and exposure control in unidimensional adaptive testing in the presence of two-dimensional data. *Applied Psychological Measurement*, 38, 563-576. DOI: <https://doi.org/10.1177/0146621614536768>. IF: 1.353.
- *Glover, R. J., Natesan, P., Wang, J., Rohr, D., McAfee Etheridge, L., Booker, D. D., Bishop, J., Lee, D., Kildare, C., & Wu, M. (2014). Judgment and intuition: An exploration of relationships between moral judgment and moral foundations. *Journal of Moral Education*, 43, 394-412. DOI: <https://doi.org/10.1080/03057240.2014.953043>. IF: 0.825.
- *Henson, R., Natesan, P., & Axelson, E. (2014). Comparisons of improvement-over chance effect sizes for two groups under variance heterogeneity and prior probabilities. *Journal of*

- Experimental Education*, 82, 205-228. DOI: <https://doi.org/10.1080/00220973.2013.813359>. IF: 1.867.
- **Kieftenbeld, V. & Natesan, P. (2013). Examining the measurement and structural invariance of LibQUAL+® across user groups. *Library & Information Science Research*, 35, 143-150. doi: 10.1016/j.lisr.2012.11.003. IF: 1.886.
- Natesan, P. & Kieftenbeld, V. (2013). Measuring urban teachers' beliefs about African American students: A psychometric analysis. *Journal of Psychoeducational Assessment*, 31, 3-15. doi: 10.1177/0734282912448243. IF: 1.614.
- *Kieftenbeld, V. & Natesan, P. (2012). Recovery of graded response model parameters: A comparison of marginal maximum likelihood and Markov Chain Monte Carlo estimation. *Applied Psychological Measurement*, 36, 399-419. DOI: <https://doi.org/10.1177/0146621612446170>. IF: 1.353.
- *Lane, F., Anderson, B., Ponce, H. F., & Natesan, P. (2012). Longitudinal invariance of the LibQUAL+® as a measure of library service quality. *Library & Information Science Research*, 34, 22-30. DOI: <https://doi.org/10.1016/j.lisr.2011.07.004>. IF: 1.886.
- Natesan, P., Carter, N. P., Webb-Johnson, G., & Walter-Roberts, P. (2011). Validity of the cultural awareness and beliefs inventory of urban teachers: A parallel mixed methods study. *International Journal of Multiple Research Approaches*, 5, 238 - 253. DOI: <https://doi.org/10.5172/mra.2011.5.2.238>.
- Maghelal, P., Natesan, P., Naderi, J. R., & Kweon, B. (2011). Pedestrian virtual environment: Testing the adaptability of driving simulator, *Journal of Architectural Planning Research*, 28, 104-117. SJR: 0.14.
- *Kieftenbeld, V., Natesan, P., & Eddy, C. (2011). An item response theory analysis of the mathematics teaching efficacy beliefs instrument. *Journal of Psychoeducational Assessment*, 29, 443-454. DOI: <https://doi.org/10.1177/0734282910391062>. IF: 1.614.
- Pookulangara, S. & Natesan, P. (2010). Examining consumers' channel-migration intention utilizing theory of planned behavior: A multigroup analysis. *International Journal of Electronic Commerce Studies*, 1, 97-116. DOI: <http://dx.doi.org/10.7903/ijecs.919>.
- Natesan, P., Limbers, C., & Varni, J. W. (2010). Bayesian estimation of graded response multilevel models using Gibbs sampling: Formulation and illustration, *Educational and Psychological Measurement*, 70, 420-439. DOI: <https://doi.org/10.1177/0013164409355696>. IF: 2.301.
- Carter, N. P., Hawkins, T. N., & Natesan, P. (2008). The impact of verve on the academic achievement of African American and European American middle school students. *The Journal of Educational Foundations*, 22, 29-46.
- Natesan, P. (2008). Time for paradigm diversity: A meta-analytic argument for the use of quantitative research in urban education, *The National Journal of Urban Education and Practice*, 1, 351-371.
- Natesan, P. & Thompson, B. (2007). Extending improvement-over-chance I-index effect size simulation studies to cover some small-sample cases. *Educational and Psychological Measurement*, 67, 59-72. DOI: <https://doi.org/10.1177/0013164406292028>. IF: 2.301.

Book Chapters

- Natesan Batley, P. (2022). Use of Bayesian Estimation in the Context of Fully Integrated Mixed Methods Models. In J. Hitchcock and A. J. Onwuegbuzie (Eds.) *Routledge Handbook for Advancing Integration in Mixed Methods Research*. Routledge.
- Natesan Batley, P. (2022). Bayesian Analyses with Qualitative Data. In A. J. Onwuegbuzie and B. Johnson (Eds.) *The reviewer's guide to mixed methods research analysis* (pp. 109-116). Routledge.

Conference Proceedings

- Kyrillidou, M., Natesan, P., & Cook, C. (2017). Longitudinal Invariance of LibQUAL+: How has LibQUAL+ changed over time? 12th International Conference on Performance Measurement in Libraries, Oxford, UK.

Newsletter

- Natesan, P., Onwuegbuzie, A. J., Hitchcock, J., & Newman, I. (2019). Fully Integrated Bayesian Thinking: A Mixed Methods Approach to the $1 + 1 = 1$ Formula. *AERA Division D Newsletter*, 10-12, http://www.aera.net/Portals/38/docs/DivD/DNews_current/DivDNewsletter_Spring19.pdf

Revise and Resubmit

- Bishop, D., Natesan Batley, P., Graham, A., & Broadbent, D. P. An item-level evaluation of the attentional style questionnaire using a sample of experienced cyclists. *Psychological Test Adaptation and Assessment*.
- Hedges, L. V., Shadish, W. R., & Natesan Batley, P. Power Analysis for Single Case Designs: Computations for $(AB)^k$ designs. *Behavioral Research Methods*.

Under Review

- Contractor, A. A., Natesan Batley, P., Compton, S., & Weiss, N. H. Relations Between Posttraumatic Stress Disorder Symptoms and Positive Memory Characteristics Among Women Reporting Intimate Partner Violence: A Micro-Longitudinal Study.
- Landau, D., Cahalan, G. D., & Natesan, Batley, P. Causal impact of fire on expansion of a globally rare wetland plant: A 40-year Bayesian time series analysis. *Fire Ecology*.
- *Natesan Batley, P., Batley, N.J., et al. Ethnic minorities are more stressed about COVID-19 yet, as with young people, are much less likely to want the vaccine: A cross-sectional survey. *Sage Open*.

Under Preparation

- Hedges, L. V., Shadish, W. R., & Natesan Batley, P. Power analysis for single-case designs using multiple baselines across participants.
- Natesan Batley, P. & Hedges, L. V. Design comparable Bayesian rate ratios for single case experimental designs with count data for unequal phase lengths. *Behavioral Research Methods*.

Funded external grants

- 2022-2025 Co-Principal Investigator: *Design Comparable Effect Sizes for Single-Case Designs* – Institute of Education Sciences. \$899,721
- 2017-2020 Evaluator: *IREs: Cross-cutting interdisciplinary research and integration of ecology and biocultural conservation in the world's southernmost forests* – National Science Foundation. \$249,963
- 2019 Evaluator: Project STArT – US Department of Education. \$1,247,881
- 2009 – 2010 Senior Investigator: *Collaborative Research: Web-Based Repository of Software Testing Tools (WReSTT)* - National Science Foundation. \$153,930

Funded internal grants

- 2022 Principal Investigator: Centre for Assessment, Data analysis, Research and Evaluation (CADRE) – Research and Professional Development Grant, CEHD, University of Louisville. \$4862.00
- 2011 – 2012 Principal Investigator: *Investigating Graded Response Multilevel Models and their applications* – Research Initiation Grant, University of North Texas. \$5692.50.
- 2010 – 2011 Principal Investigator: *Impact of culturally responsive professional development program the cultural sensitivity of urban teachers: An item response study* – Junior Faculty Summer Research Fellowship, University of North Texas. \$5000.
- 2009 – 2010 Principal Investigator: *Teachers' ethnicity and culturally responsive professional development: A Bayesian means model analysis of cultural beliefs*. Junior Faculty Summer Research Fellowship, University of North Texas. \$5000.

CONFERENCE PRESENTATIONS

International/National Conference Presentations

* presented with students; ** Dean's Award for Outstanding Research Paper;

*** SERA Outstanding Research Paper Award, ****MSERA Outstanding Research Paper Award

Natesan Batley, P. & Hedges, L. V. (2022). Design comparable Bayesian rate ratios for single case experimental designs with count data for unequal phase lengths. Presented at the annual meeting of the American Educational Research Association, San Diego, CA.

*Natesan Batley, P., Contractor, A.A., Weiss, N.H., Compton, S.E., & Price, M. (2021). Psychometric Evaluation of the Posttrauma Risky Behaviors Questionnaire: Item Response Theory Analyses. Presented at the annual meeting of the International Society for Traumatic Stress Studies.

Natesan, P. (2019). Bayesian rate ratio effect size for count data in single-case experimental designs. Presented at the annual meeting of the American Educational Research Association, Toronto, Canada.

Natesan, P. & Hedges, L. V. (2019). Accurate model vs. accurate estimates: A study of Bayesian single-case experimental designs. Presented at the annual meeting of the American Educational Research Association, Toronto, Canada.

****Natesan, P., Boedeker, P. & Onwuegbuzie, A. J. (2019). Adopting a Meta-Generative Way of Thinking in the Field of Education via the Use of Bayesian Methods. Presented

- at the annual meeting of the American Educational Research Association, Toronto, Canada.
- Hitchcock, J., Natesan, P., Newman, I., & Onwuegbuzie, A. (2018). *Toward fully mixed integration design and analysis: Learning from a Bayesian framework*. Presented at the annual meeting of the American Educational Research Association, New York, NY.
- Natesan, P., Minka, T.P., & Hedges, L. V. (2018). *Investigating immediacy in multi-phasic single case experimental designs using a Bayesian unknown change-points model*. Presented at the annual meeting of the American Educational Research Association, New York, NY.
- *Palka, J., Natesan, P., Nandakumar, R., & Shrestha, P. (2018). *Comparing Bayesian unknown change-point model and simulation modeling analysis of single case experimental designs*. Presented at the annual meeting of the American Educational Research Association, New York, NY.
- *Shrestha, P., Natesan, P., Nandakumar, R., & Palka, J. (2018). *Illustrating how the Bayesian unknown change point model supplements visual analysis for single case designs*. Presented at the annual meeting of the American Educational Research Association, New York, NY.
- Kyrillidou, M., Natesan, P., & Cook, C. (2017). *Longitudinal invariance of LibQUAL+®: How has LibQUAL+® changed over time?* Presented at the 12th International Conference on Performance Measurement in Libraries, Oxford, UK.
- *Boedeker, P., Natesan, P., & Onwuegbuzie, A. (2017). *Prevalence of Bayesian methods in the field of education*. Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
- *Glover, R., Natesan, P. & Mitchell, M (2015). *Family Context and Peer Victimization: A Longitudinal Analysis*. Poster to be presented at the Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA.
- Natesan, P., Kalinowski, K., & Henson, R. (2014). *Stratified Item Selection and Exposure Control in Unidimensional Adaptive Testing in the Presence of Two-dimensional Data*. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.
- Natesan, P. (2013). *Evaluating Bayesian, Robust Maximum Likelihood, and Robust Least Squares Approaches in Ordinal Confirmatory Factor Analysis for Small Samples*. Paper presented at the International Meeting of the Psychometric Society, Arnhem, The Netherlands.
- *Natesan, P. & Xing, Q. (2012). *Multitrait Multirank Model: Formulation and Demonstration Using LibQUAL+®*. Paper presented at the International Meeting of the Psychometric Society, Lincoln, NE.
- *Ponce, H. & Natesan, P. (2012). *Simulation of LibQUAL+® Lite from LibQUAL+®: An Analysis of Confidence Intervals, Root Mean Square Deviations and Bias*. Paper presented at the International Meeting of the Psychometric Society, Lincoln, NE.
- Natesan, P. (2012). *Bayesian Estimation of One-Step Ordinal Structural Equation Models Using IRT Scores*. Paper presented at the International Meeting of the Psychometric Society, Lincoln, NE.
- Kieftenbeld, V. & Natesan, P. (2012). *Recovery of Graded Response Model Parameters: A*

- Comparison of Marginal Maximum Likelihood and Markov Chain Monte Carlo Estimation*. Paper presented at the Annual Meeting of the American Educational Research Association, Vancouver, Canada.
- Natesan, P. (2012). *One-step Ordinal Structural Equation Modeling Using Latent Trait Scores: A Bayesian Perspective*. Paper presented at the Annual Meeting of the American Educational Research Association, Vancouver, Canada.
- Natesan, P., Nandakumar, R., Minka, T., Qian, Rubright, J. (2012). *Comparison of Three IRT Parameter Estimation Techniques and Priors: MML, MCMC, and Variational Bayesian*. Paper to be presented at the Annual Meeting of the American Educational Research Association, Vancouver, Canada.
- *Klein, R., Natesan, P., Hopewell, C.A., Cooper, D. Kennedy, J. (2011). *Dimensional Analysis and Construct Validity Assessment of the Neurobehavioral Symptom Inventory*. Poster presentation at the meeting of the National Academy of Neuropsychology. Marco Island, FL.
- Natesan, P., Nandakumar, R., Minka, T., Qian, Rubright, J. (2010, July). *Comparison of Three IRT Parameter Estimation Techniques and Priors: MML, MCMC, and Variational Bayesian*. Paper presented at the International Meeting of the Psychometric Society, Athens, GA.
- Pookulangara, S. & Natesan. P. (2010). *Examining Consumers' Channel-Migration Intention Utilizing Theory of Planned Behavior: A Multigroup Analysis*. Paper presented at the International Conference on Internet Studies, Taipei, Taiwan.
- Natesan, P. (2009, July). *Bayesian Estimation of Graded Response Multilevel Models*. Paper presented at the International Meeting of the Psychometric Society, Cambridge, UK.
- Natesan, P. (2009, April). *Graded Response Models in the Hierarchical Generalized Linear Model Framework: A Simulation for Test Lengths, Sample Sizes, and Variations in the Predictor Variable*. Paper presented at the annual meeting of the American Educational Research Association, San Diego.
- Natesan, P. (2009, April). *Multilevel Item Response Theory: Analysis of Urban Teachers' Cultural Awareness in Teaching African American Students*. Paper presented at the annual meeting of the American Educational Research Association, San Diego.
- Natesan, P., Walter-Roberts, P. F., Webb-Johnson, & Carter, N. P. (2009, February). *Validity of the Cultural Awareness and Beliefs Inventory of Urban teachers Using the Mixed Methods Framework*. Paper presented at the annual meeting of the American Educational Research Association, San Diego.
- Natesan, P., Limbers, C., & Varni, J. W. (2008, March). *A Multilevel Item Response Theory Analysis of Health-Related Quality of Life (HRQOL): An Illustration with 11,158 Healthy and Chronically Ill Children Using the PedsQL™ Emotional Functioning Scale*. Paper presented at the International Objective Measurement Workshop (IOMW 2008) conference, New York.
- Natesan, P. (2007, April). *Two-Parameter Multilevel Item Response Models: A Simulation Study of Test Length and Sample Size Influences*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Hawkins, T. N., Natesan, P., & Carter, N. P. (2007, April). *The Relationship Between Verve*

and Academic Achievement of African American and European American Students. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

- Walter-Roberts, P., Natesan, P., Carter, N. P. (2007, April). *Development and Validation of an Instrument to Assess the Cultural Beliefs/Awareness of Urban Teachers*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Natesan, P. & Thompson, B. (2005, April). *The Improvement-Over-Chance I-Index Effect Size: A Monte Carlo Simulation Study*. Paper presented at the annual meeting of the American Educational Research Association, Montréal.

Regional Conference Presentations

- Natesan, P., Boedeker, P. & Onwuegbuzie, A. J. (2019). *Adopting a Meta-Generative Way of Thinking in the Field of Education via the Use of Bayesian Methods*. Presented at the annual meeting of the Mid-South Educational Research Association, Pensacola, FL.
- Natesan, P. & Hedges, L. V. (2017). *Bayesian Unknown Change-Point Models to Investigate Causality in Single Case Designs*. Texas Universities' Educational Statisticians and Psychometricians Annual Meeting. Austin, TX.
- *Boedeker, P., Natesan, P., & Onwuegbuzie, A. (2017). *Reframing Quantitative Research: The Role of Bayesian Methodology*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.
- Natesan, P. (2017). *Bayesian Unknown Change-Point Models to Investigate Causality in Single Case Designs*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.
- Natesan, P. (2016). *Bayesian Single Subject Designs*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- Natesan, P., Kalinowski, K., & Henson, R. (2014). *Stratified Item Selection and Exposure Control in Unidimensional Adaptive Testing in the Presence of Two-Dimensional Data*. Texas Universities' Educational Statisticians and Psychometricians Annual Meeting. College Station, TX.
- Skidmore, S. & Natesan, P., (2014). *An Introduction to MPlus*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- *Xin, X., Xing, Q., & Natesan, P. (2014). *MCMC Estimation of Bi-factor Graded Response Models*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- Natesan, P., Nandakumar, R., Minka, T., & Rubright, J. (2013). *I-PL Parameter Recovery Using Bayesian, MML, and Variational Bayesian Estimation*, Texas Universities' Educational Statistics and Psychometrics Meeting, Austin, TX.
- Natesan, P. & Kieftenbeld. (2013). *Bayesian ANOVA: An Invitation*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.
- *Natesan, P., Johnson, C., Kabakci, M., Ruckthongsook, W., Turner, H., Xing, Q., Xin, X. (2013). *A Primer in Bayesian Statistics*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.

- Kieftenbeld, V. & Natesan, P. (2012). *Recovery of Graded Response Model Parameters: A Comparison of Marginal Maximum Likelihood and Markov Chain Monte Carlo Estimation*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- Natesan, P. (2012). *One-step Ordinal Structural Equation Modeling Using Latent Trait Scores: A Bayesian Perspective*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- *Ponce, H. & Natesan, P. (2012) *Comparisons Between the Long and Light LibQUAL+® Versions as a Measure of Library Service Quality*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- *Xing, Q. & Natesan, P. (2012). *Multitrait Multilevel Model for Testing the Convergent Validity of LibQUAL+®*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- Zientek, L., Natesan, P., & Nimon, K. (2012). *Conducting and Publishing Research: An Overview of the Research Process*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- *Lane, F., Anderson, B., Ponce, H. F. & Natesan, P. (2011, February). *Longitudinal Invariance of the LibQUAL+® as a Measure of Library Service Quality*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.
- Natesan, P. & Kieftenbeld, V. (2011, February). *Teaching African American Students in Urban Schools: A Graded Response Multilevel Model Study of Teachers' Beliefs*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX.
- Henson, R., Chen, Q., Hull, D., Natesan, P., Nimon, K. Tashakkori, A. (2010, February). *Quantitative Consultation for Researchers*. Training session presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- Natesan, P. (2010, February). *Graded Response Multilevel Models: A Demonstration*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
- ***Natesan, P., Walter-Roberts, P. F., Webb-Johnson, & Carter, N. P. (2009, February). *Validity of the Cultural Awareness and Beliefs Inventory of Urban teachers using the Mixed Methods Framework*. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio.
- Natesan, P. (2008, November). *Measurement of Cultural Awareness and Beliefs of Urban Teachers Using Multilevel Item Response Theory: An Illustration*. Paper presented at the annual meeting of the Florida Educational Research Association, Orlando.
- Natesan, P. (2007, March). *A Multilevel Item Response Theory Analysis of Differential Item Functioning on the Teacher Perceptions of Cultural Awareness and Beliefs – Cultural Awareness Scale*. Paper presented at the annual meeting of the Student Research Week, College Station.
- **Natesan, P. (2007, February). *The Case for IRT in Latent Trait Measurement: A Literature Review*. Paper presented at the annual meeting of the Southwest Educational Research

Association, San Antonio.

- Natesan, P. (2006, March). *A Primer on Multilevel Item Response Theory Models*. Paper presented at the annual meeting of the Student Research Week, College Station.
- Natesan, P. (2006, February). *Cross-Classified Multilevel IRT Models: A Primer*. Paper presented at the annual meeting of the Southwest Educational Research Association, Austin.
- Natesan, P. (2006, February). *Examining Test Bias in Urban Environments Using Cross-Classified Multilevel IRT Models*. Paper presented at the annual meeting of the Southwest Educational Research Association, Austin.
- Natesan, P. & Thompson, B. (2006, January). *Extending Improvement-Over-Chance I-Index Effect Size Simulation Studies to Cover Some Small-Sample Cases*. Poster presented at the Educational Research Exchange, College Station.
- Natesan, P. (2005, February). *Using Spreadsheets to Learn Item Response Theory (IRT)*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans.
- Natesan, P. (2005, January). *Using Spreadsheets to Learn Item Response Theory (IRT)*. Paper presented at the Educational Research Exchange, College Station.
- Natesan, P. (2004, February). *Effect Size Choices and Why Today They Are "Required" at So Many Journals*. Paper presented at the annual meeting of the Southwest Educational Research Association, Dallas.
- Natesan, P. (2004, January). *Effect Size Choices and Why Today They Are "Required" at So Many Journals*. Paper presented at the Educational Research Exchange, College Station.

JOURNAL ACTIVITIES

a. Associate Editor

- Associate Editor – *International Journal of Multiple Research Approaches* (Fall 2017-present)
- Associate Editor – *Frontiers in Psychology: Quantitative Psychology and Measurement* (Fall 2009-present)
- Associate Editor - *The National Journal of Urban Education and Practice* (Spring 2009).

b. Editorial Board Member

- *Journal of Research on Educational Effectiveness* (Jan 2021 – Dec 2022).
- *The National Journal of Urban Education and Practice* (Fall 2008).

c. Statistical Advisor

- *British Journal of Psychiatry* (2022-present).
- *British Journal of Psychiatry Open* (2022-present).

d. Editorial Assistant

- Editorial Assistant - *The National Journal of Urban Education and Practice* (Spring 2006).
- Editorial Assistant for *Journal of Public Management and Social Policy, Summer 2004, Vol 10, Issue 1.*

e. Ad-hoc Reviewer

- *Applied Psychological Measurement*
- *American Educational Research Journal – Teaching, Learning, and Human Development*
- *BMC: Medical Research Methodology*
- *Behavioral Research Methods*
- *Cancer Causes and Control*
- *Journal of Educational and Behavioral Statistics*
- *Journal of Educational Measurement*
- *Journal of Experimental Education*
- *Journal of Traumatic Stress*
- *Library and Information Science Research*
- *Psychometrika*
- *Statistics in Medicine*
- *Sage Open*
- *Review of Research in Education*
- *American Educational Research Association (AERA) Annual conference*
- *Southwest Educational Research Association (SERA) Annual conference*
- *Florida Educational Research Association (FERA) Annual conference*

INVITED WORKSHOPS

- *A Framework to Re-IMAGINE the increase of Black methodologists in education research: Integrative mixed methods anti-racist groundwork for investigating and nurturing equity.* Co-presented with Sandra Abrams, Anthony Onwuegbuzie, Elena Forzani, and Schaefer – Mixed Methods International Research Association – Caribbean Chapter, March, 2022.
- *Single Case Designs: Precision Medicine & Science* – Ancestral Genomics Conference II, November 2021.
- *Statistical Simulation: The Best way to Learn Statistics* – Two-day workshop, Oxford University, May 2021
- *Statistical Simulation: Learning and Playing with Statistics* – Two-day workshop, Oxford University, May 2018
- *Statistical Simulation: Learning and Playing with Statistics in R* – Workshop for faculty and graduate students, Oxford University, May 2016
- *Becoming informed consumers of quantitative research* – American University of Beirut Medical Center, December 2016, March 2017

INVITED TALKS

- *Simulations in R* – Oxford University, Summer 2021.
- *Bayesian rate ratio effect sizes to measure treatment effect for ordinal data in single case designs* - Quantitative Hub Seminar Series, Oxford University, February 2021
- *Bayesian unknown change-point models to investigate causality in single case designs* –

University of Bristol, May 2018.

- *Bayesian unknown change-point models to investigate causality in single case designs* – Quantitative Hub Seminar Series, Oxford University, June 2016
- *Single-case experimental designs*, NIRE seminar series, Oxford University, June 2016 (co-author: Smita Mehta)
- *Bayesian unknown change-point models to investigate causality in single case designs* – University of Bristol, April 2016
- *Bayesian Estimation of Ordinal Structural Equation Models* - University of Texas, Austin, Feb 2013
- *Bayesian Statistics and Estimation* - University of North Texas, April 2012
- *Item Response Models in Statistical Framework: An Illustration with Cultural beliefs Data* - Department of Statistics, Florida International University, Jan 2009
- *Research Methods and Statistics: A Primer* - Texas Southern University, March 2007
- *Introduction to Quantitative Research and SPSS* - Texas A&M University, November 2005

SELECT HONORS, AWARDS, AND SERVICE

- Invited panelist grant reviewer – Institute of Educational Sciences (2018, 2019, 2020).
- Chair, Educational Statisticians Special Interest Group, American Educational Research Association (2018-2019)
- Outstanding Research Paper Award for the paper entitled, “*Adopting a Meta-Generative Way of Thinking in the Field of Education via the Use of Bayesian Methods.*”
- Member, AERA Division D Newsletter Committee (2018-present).
- Member, AERA Division D Equity & Inclusion Committee (2018-present)
- Program Chair, Educational Statisticians Special Interest Group, American Educational Research Association (2017-2018)
- President, Southwest Educational Research Association (2017)
- President-Elect and Program Chair, Southwest Educational Research Association (2016)
- Early Career Reviewer – NIH (2015-present)
- Elected member at-large, Board of Directors, Southwest Educational Research Association (2011-2014)
- “*Outstanding Research Paper Award*” by the Southwest Educational Research Association for paper entitled, “*Validity of the Cultural Awareness and Beliefs Inventory of Urban teachers: A Mixed Methods Design*” (February 2009)
- “*Dissertation of the Year Award*” by the College of Education and Human Development, Texas A&M University for doctoral dissertation entitled, “*Estimation of Two-Parameter Multilevel Item Response Theory Models with Predictor Variables: Simulation and Substantiation for an Urban School District*” (September 2008)
- “*Dean’s Award*” for Outstanding Student Paper for a research paper entitled, “*The case for IRT in latent trait measurement: A literature review.*” (February 2007)

INSTRUCTIONAL ACTIVITIES

Areas of Expertise

General Statistics, Research Methods, Structural Equation Modeling, Simulation, Hierarchical Linear Modeling, Psychometrics.

Courses Taught

Research Methods

Introduction to Statistics

Statistical Theory and Simulation

Statistics for Educational Research

Research Methods for Education

Hierarchical Linear Modeling

Structural Equation Modeling

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- a. American Educational Research Association
- b. Southwest Educational Research Association
- c. Psychometric Society
- d. National Council for Measurement in Education

GRADUATE STUDENT ADVISING

1. Doctoral Committee Assignments

a. Chairing/advising (graduating year)

Hector Ponce– (2013)

Qin Aerts – (2015)

Xin Xin – (2017)

Elvalicia Granada – (2015)

Heather Turner (co-chair) – (2015)

Monique O’Bryant (2017)

Peter Boedeker (2018)

Maside Kabakci (2019)

Jannah Asad (ongoing)

b. Committee member of completed dissertations

Judy Bolen

Ursula Johnson

Vandana Mehta

Forrest Lane

Connie Richardson

Yanet Cordoza

Eneida Padron

Jennifer Alward
Andrew McKenzie
Lindsay Eason
David Holland

2. Masters Student Advisement

- a. Amber Ellison (completed)

3. Undergraduate Student Advisement

- a. Hanifeh Mushfiq
b. Elodie Perrin
c. Sanaz Mousavi
d. Tugce Bellikli
e. Ayisha Khan
f. Tyra Nichols
g. Priscilla Toko

DISSERTATIONS CHAIRED

- Ponce, H. (2013). Is it more advantageous to administer Libqual+® Lite over Libqual+®? An analysis of confidence intervals, root mean square errors, and bias.
- Aerts, Xing. Q. (2015). Time series data analysis of single subject experimental designs using Bayesian estimation.
- Granado, E. (2015). Comparing three effect sizes for latent class analysis.
- Turner, H. (2015). A Performance Evaluation of Confidence Intervals for Ordinal Coefficient Alpha. (co-chair)
- Xin, Xin. (2016). Using posterior predictive checking of item response theory models to study invariance.
- O'Bryant, M. (2017). How attitude towards statistics courses and the field of statistics predicts statistics anxiety among undergraduate social science majors: A validation of the statistical anxiety scale.
- Kabakci, M. (2019). Reporting the performance of confidence intervals in statistical simulation studies: A systematic literature review.

SELECT DISSERTATION COMMITTEES SERVED

- Alward, J. (2013). The extent of autism knowledge of novice alternatively certified special education teachers in Texas.
- Bolen, J. (2011). Spatial ability, motivation, and attitude of students as related to science achievement.
- Cordoza, Y. (2013). An exploration of teachers' adoption of the bring your own technology program.
- Danks, S. (2015). Measuring culture of innovation: A validation study of the innovation quotient instrument.
- Eason, L. R. (2014). Computer assisted instruction to improve theory of mind in children with

autism.

- Holland, D. F. (2015). Reliability generalization: A systematic review and evaluation of meta-analytic methodology and reporting practice.
- Johnson, U. (2011). Parent involvement and science achievement: A latent growth curve analysis.
- Lane, F. C. (2011). The use of effect size estimates to evaluate covariate selection, group separation, and sensitivity to hidden bias in propensity score matching.
- McKenzie, A. (2014). Measuring teaching effectiveness using value-added and observation rubric scores.
- Mehta, V. (2011). Structural validity and item functioning of the LoTi Digital-Age survey.
- Onsongo, E. N. (2015). Self-efficacy, academic engagement, and student-teacher relationships for ninth-grade African American male students' algebra I achievement: A structural equation model.
- Ruckthongsook, W. (2017). The influence of disease mapping methods on spatial patterns and neighborhood characteristics in health risk.
- Terry, C. (2015). Teaching children with autism to vocally mand for others to perform an action.
- Wang, J. (2015). Moral judgment and digital piracy: predicting attitudes, intention, and behavior regarding digital piracy using a modified version of the defining issues test.
- Wu, W.-N. (2015). Determinants of citizens' 311 use behaviors: 311 citizen-initiated contact, contact channel choice, and frequent use.

SERVICE

1. Member, Search Committee for Post-doc, University of Louisville (2021-2022)
2. Coordinator for Data Analysis Certificate, Brunel University London
3. Member, Academic Affairs Committee (2018-2021), UNT
4. Member, Graduate Council (2018-2021), UNT
5. Member, COE Research and Scholarship Committee (2019), UNT
6. Member, 2 Search Committees for Human Development and Family Studies (2018-2019), UNT
7. Chair, Grade Appeals Committee (2017), UNT
8. Chair, Tenure and Promotion Committee (2016-2017), UNT
9. Member, Search Committee, Faculty in Special Education (2016-2017), UNT
10. Member, Merit and Awards Committee (2016-2017), UNT
11. Member, Student Affairs Committee (2016-2017), UNT
12. Co-chair, The advances in research designs symposium (TARDIS) (2014 – 2018), UNT
13. Elected member, Faculty Senate Group VI representative (2014 – 2015), UNT
14. Elected member, Faculty Senate – Committee of committees (2014 – 2015), UNT
15. Elected member, Fine Arts Series (2014 – present), UNT
16. Member, SETE Task Force – Faculty Senate (2014), UNT
17. Coordinator, Doctoral core exam (2012-2014), UNT
18. Member, University Teaching Effectiveness (SETE) Committee (2011-2013), UNT
19. Member, Grade Appeals Committee (Jan-Feb 2013), UNT

20. Member, Faculty search committee for family studies (2011-2012), UNT
21. Member, Faculty Advisory Committee (2011-2014), UNT
22. Founder/mentor, Bayesian Reading Group for UNT Doctoral Students (2011, 2012), UNT
23. Member, Charter Revision Committee (2010-11), UNT
24. Member, Scholarships Committee (2010-11), UNT
25. Member, Doctoral Admissions Committee (2009-2010), UNT
26. Member, Curriculum Committee (2009-2010), UNT
27. Director, Center for Interdisciplinary Research and Analysis (CIRA) (Spring 2011), UNT
28. Speaker - “Culture of Entrepreneurship and Networking” conducted by the Office of Research and Economic Development, UNT (April 2010), UNT