Ji Hoon Ryoo, Ph.D.

A. Personal Data

A.1 Current position

Assistant Professor (Aug. 2012 to Current)
  Research, Statistics, and Evaluation Program
  Educational Leadership, Foundations, and Policy
  Curry School of Education
  University of Virginia

Contact information
Mailing address: 417 Emmet Street South,
                      Charlottesville, VA 22904
Phone: (434) 924-2363
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A.2 Research interests

1. **Quantitative Methods:** (1) Analysis of Longitudinal and Multilevel Data, (2) Structural Equation Modeling, (3) Educational Measurement (Psychometrics), (4) Propensity Score Analysis, and (5) Meta-Analysis
2. **Substantive Research Areas:** (1) Mathematics/Science/Special Education, (2) Social and Behavioral Sciences, and (3) Public Health in Underrepresented Population

A.3 Education

Ph.D. in Quantitative Methods in Education, Educational Psychology
University of Minnesota, Twin Cities, Minnesota, June 2010
  Dissertation: Model Selection with the Linear Mixed Effects Models for Longitudinal Data
  Dissertation Advisor: Dr. Jeffrey Long
  Dissertation Committee: Dr. Mark Davison, Dr. Michael Harwell, and Dr. Melanie Wall

M.S. in Statistics (2010); M.S. in Mathematics (2006)
University of Minnesota, Twin Cities, Minnesota
  Thesis: New Variable Selection Criteria in Model Selection
  Thesis Committee: Dr. Snigdhansu Chatterjee (advisor), Dr. Galin Jones and Dr. Jeffrey Long

M.A. in Mathematics
University of Maine, Orono, Maine, May 2001
  Thesis: Identities for the Multiple Zeta Values using the Shuffle Operator
  Thesis Committee: Dr. David Bradley (advisor), Dr. Henrik Bresinsky and Dr. Chip Snyder

B.S. in Mathematics, Minor in Mathematics Education with a teacher's license
Kyungpook National University, Daegu, Korea, Feb. 1999

A.4 Working experience

Aug. 2012 – Current   University of Virginia, Charlottesville, VA
                             Assistant Professor
                             Research, Statistics and Evaluation Program
                             Curry School of Education

July 2010 – July 2012   University of Nebraska, Lincoln, NE
                             Postdoctoral Research Associate (Mentors: Dr. James Bovaird and Dr. Sue Sheridan)
                             Statistics and Research Methodology Unit
                             Nebraska Center for Research on Children, Youth, Families, and Schools

Aug. 2009 – July 2010   Inver Hills Community College, Century College, & St. Olaf College, MN
                             Adjunct Faculty Member
                             Mathematics and Statistics Departments

June 2009 – July 2010   Professional Data Analysts, INC, Minneapolis, MN
                             Statistician (Supervisors: Dr. Michael Luxenberg & Matt Christenson)

B. Scholarship

B.1 Publications

1. **Ryoo, J. H.**, Hong, S., Bart, W, Shin, J., & Bradshaw, C. (in press). Investigating the effect of SW-PBIS on student learning and behavioral problems in elementary and middle schools. *Psychology in the Schools.*

2. **Ryoo, J. H.**, Tai, R. H., & Skeeles-Worley, A. D. (in press). Examination of longitudinal invariance on a framework for observing and categorizing instructional strategies. *Research in Science Education.* https://doi:10.1007/s11165-018-9698-7

3. **Ryoo, J. H.**, Molfese, V. J., & Brown, E. T. (in press). Strategies to encourage mathematics learning in early childhood: Discussions and brainstorming promote strong performance. *Early Education and Development.* https://doi.org/10.1080/10409289.2018.1442095

4. Hong, S., **Ryoo, J. H.**, Noh, J., Lee, M., & Shin, J. (in press). The mediation effect of preservice teacher attitude toward inclusion for students with autism in South Korea: A structural equation modeling approach. *International Journal of Inclusive Education.* https://doi.org/10.1080/13603116.2018.1449021

5. **Ryoo, J. H.**, Wang, C., Swearer, S., Hull, M., & Shi, D. (2018). Longitudinal model building using latent transition analysis: An example of using school bullying data. *Frontiers in Psychology – Quantitative Psychology and Measurement, 9:675.* https://doi.org/10.3389/fpsyg.2018.00675

6. **Ryoo, J. H.**, Konold, T. R., Long, J. D., Molfese, V. J., & Zhou, X. (2017). Nonlinear growth mixture models with fractional polynomials: An illustration with early childhood mathematics ability. *Structural Equation Modeling: A Multidisciplinary Journal, 24(6),* 897-910. http://dx.doi.org/10.1080/10705511.2017.1335206

7. Hong, S., **Ryoo, J. H.**, Kwak, N., & Lee, D. Y. (2017). Measuring school effectiveness via VAMs and examining its psychometrics. *Secondary Institute of Education, 65(3),* 661-685.

8. **Ryoo, J. H.**, Long, J. D., Welch, G. W., Reynolds, A., & Swearer, S. M. (2017). Fitting the fractional polynomial model into non-Gaussian longitudinal data. *Frontiers in Psychology – Quantitative Psychology and Measurement, 8:1431.* http://doi.org/10.3389/fpsyg.2017.01431

9. **Ryoo, J. H.**, Wang, C., Swearer, S., & Part, S. (2017). Investigation of transitions in bullying/victimization statuses of gifted and general education. *Exceptional Children, 83(4),* 396-411. http://journals.sagepub.com/doi/full/10.1177/0014402917698500

10. Hong, S., **Ryoo, J. H.**, Park, S., & Yoo, J. (2017). Attitudes of general education and special education teachers toward inclusive education: A causal inference model. *Journal of Learner-Centered Curriculum and Instruction, 17(24),* 321-342. http://dx.doi.org/10.22251/jlcci.2017.17.24.321

11. Park, S., Hong, S., Yoo, J., & **Ryoo, J. H.** (2017). Investigation of factors affecting general education teacher satisfaction toward inclusion via a structural equation model. *Journal of Learner-Centered Curriculum and Instruction, 17(14),* 337-356. http://dx.doi.org/10.22251/jlcci.2017.17.14.337

12. **Ryoo, J. H.,** & Hwang, H. (2017). Model evaluation in the generalized structured component analysis using the confirmatory tetrad analysis. *Frontiers in Psychology – Quantitative Psychology and Measurement, 8:916.* https://doi.org/10.3389/fpsyg.2017.00916

13. Wang, C., **Ryoo, J. H.**, Swearer, S., Turner, R. H., & Goldberg, T. (2017). Longitudinal relationships of bullying and moral disengagement among adolescents. *Journal of Youth and Adolescence, 46(6),* 1304-1317. doi:10.1007/s10964-016-0577-0

14. Park, S., Callahan, C. M., & **Ryoo, J. H.** (2016). Assessing gifted students' beliefs about intelligence with a psychometrically defensible scale. *Journal for the Education of the Gifted, 39(4)*, 288-314. doi:10.1177/0162353216671835

15. **Ryoo, J. H.**, Molfese, V., Brown, E. T., Karp, K. S., Welch, G., & Bovaird, J. A. (2015). Examining factor structures on the Test of Early Mathematics ability – 3: A longitudinal approach. *Learning and Individual Differences*, *41,* 21-29. http://dx.doi.org/10.1016/j.lindif.2015.06.003

16. **Ryoo, J. H.,** Wang, C., & Swearer, S. (2015). Examination of the change of latent statuses in bullying behaviors across time. *School Psychology Quarterly, 30(1),* 105-122. http://dx.doi.org/10.1037/spq0000082

17. **Ryoo, J. H.**, Molfese, V., Heaton, R., Zhou, X., Brown, E. T., Prokasky, A., & Davis, E. (2014). Early Mathematics Skills from Prekindergarten to First Grade: Score Changes and Ability Group Differences in Kentucky, Nebraska, and Shanghai Samples. *Journal of Advanced Academics, 25(3),* 162-188. doi:10.1177/1932202X14538975

18. Minke, K., Sheridan, S., Kim, E., **Ryoo, J. H.**, & Koziol, N. (2014). Congruence in Parent-Teacher Relationships: The Role of Shared Perceptions. *The Elementary School Journal, 114(3)*, 527-546. http://www.jstor.org/stable/10.1086/675637

19. Sheridan, S. M., **Ryoo, J.**, Garbacz, S. A., Kunz, G. M., & Chumney, F. (2013; JSP Article of the Year). The Efficacy of Conjoint Behavioral Consultation on Parents and Children in the Home Setting: Results of a Randomized Controlled Trial. *Journal of School Psychology, 51(6),* 717-733. http://dx.doi.org/10.1016/j.jsp.2013.09.003

20. Hong, S. & **Ryoo, J. H.** (2012). The Effects of SW-PBIS on the Academic Achievement of Students with Intellectual and Developmental Disabilities. *Journal of Special Education: Theory and Practice, 13(3)*, 243-267.

21. **Ryoo, J. H.** (2011). Model Selection with the Linear Mixed Model for Longitudinal Data. *Multivariate Behavioral Research, 46(4),* 598-624. doi:10.1080/00273171.2011.589264

22. Hong, S. & **Ryoo, J.** (2011). The Effect of Performance Pay on School-level Student Achievement: Evidence for Minnesota Public Schools. *Teacher Education Research, 50(2)*, 181-199.

23. Hong, S., **Ryoo, J.**, & Bart, W. (2011). Longitudinal Analysis of Performance Pay for Special Education Student Group Achievement. *Korean Society of Special Education, 43(4),* 219-236.

24. Long, J. D. & **Ryoo, J.** (2010). Using Fractional Polynomials to Model Nonlinear Trends in Longitudinal Data. *British Journal of Mathematical and Statistical Psychology, 63(1),* 177-203. doi:10.1348/000711009X431509

25. Hong, S. & **Ryoo, J.** (2010). Analysis of the Effect of Performance Pay on School Performance in Math and Reading Assessments Using Propensity Score Models. *Journal of Educational Administration, 28(2),* 131-147.

26. Hong, S. & **Ryoo, J.** (2010). The Effect of Performance Pay on Special Education Student Group Achievement. *Special Education Research, 9(1),* 5-20.

27. Bowman, D., Bradley, D. M., & **Ryoo, J.** (2003). Some multi-set inclusions associated with shuffle convolutions and multiple zeta values. *European Journal of Combinatorics, 24(1),* 121-127. doi:10.1016/S0195-6698(02)00117-8

B.2 Book chapters and conference proceedings

1. **Ryoo, J. H.**, & Pullen, P. C. (2017). Regression discontinuity design for longitudinal data, cross-sectional data, and intervention research. In James M. Kauffman, Daniel P. Hallahan, & Paige C. Pullen (Eds.), *Handbook of Special Education* (2nd ed., pp. 137-150).

2. **Ryoo, J. H.**, Hong, S., Kwon, J., & Kwak, N. (2015). Investigation of nonlinear growth mixture models of student learning. *Proceedings of 9th Korean Education Longitudinal Study*, 99-109.

3. Hong, S., **Ryoo, J. H.**, Kwon, J., & Kwak, N. (2015). Study of measures on school effectiveness via value-added models. *Proceedings of 9th Korean Education Longitudinal Study*, 127-141.

B.3 Papers under review and/or revision

1. **Ryoo, J. H.**, Skeeles-Worley, A. D., & Tai, R. H. (under 2nd revision). (Re-)Design a measure of student's attitudes toward science: A longitudinal psychometric approach. *AERA Open.*

2. Tai, R. H., **Ryoo, J. H.**, Kong, X., Mitchell, C., Skeeles-Worley, A. D., Almarode, J. T., Maltese, A. V. & Dabney, K. P. (revised and resubmitted). A New Approach to Gauging Informal STEM Education Program Impact: A Conceptual Framework and a Measurement Instrument. *Journal of Youth Development.*

3. Jang, B. G., **Ryoo, J. H.**, & McKenna, M. C. (under 1st revision). Multiple dimensions of Korean adolescents' reading attitudes and achievement. *Reading and Writing: An Interdisciplinary Journal.*

4. Jang, B. G., **Ryoo, J. H.**, & Smith, K. C. (under review). Latent profiles of adolescent attitudes toward print and digital reading. *Learning and Individual Differences.*

5. Pullen, P. C., & **Ryoo, J. H.** (under review). Prevalence of emotional and behavioral disorders from parental and professional perspectives: A comparison of the data from the national surveys of children's health and the office of special education's reports to congress. *Behavioral Disorders.*

6. Pullen, P. C., Ashworth, K. E., & **Ryoo, J. H.** (under review). Prevalence rates of students identified for special education and their interstate variability: A longitudinal analysis. *Learning Disability Quarterly.*

7. Pas, E. T., **Ryoo, J. H.**, Musci, R., & Bradshaw, C. (under review). The effects of a state-wide scale-up of school-wide positive behavior intervention and supports on behavioral and academic outcomes: A quasi-experimental examination. *Journal of School Psychology.*

8. Lee, M., **Ryoo, J. H.**, Chung, M., Anderson, J. G., Rose, K. M., & Williams, I. C. (under review). Effective interventions for depressive symptoms among caregivers of persons with dementia: A systematic review via Meta-Analysis. *International Journal of Older People Nursing.*

9. Walker, A., Lee, M., & **Ryoo, J. H.** (under review). Macro contexts, principal's time use for interaction with individual students and academic achievement: A study of elementary school principals from 34 Societies. *International Journal of Educational Development.*

10. Chiu, J., DeJaegher, C., Chao, J., & **Ryoo, J. H.** (under revision). Investigating the effect of physical augmentation of virtual laboratories on student learning in secondary science.

11. Park, S., Callahan, C. M., & **Ryoo, J. H.** (under revision). STEM school students' success: The influence of implicit theory of intelligence, achievement goals, intrinsic motivation, and mathematics achievement on STEM career interest.

12. Park, S., Callahan, C. M., & **Ryoo, J. H.** (under revision). Evidence for the implicit theories of intelligence scale's measurement invariance between non-identified and identified gifted.

13. Lupo, S., Tortorelli, L., Invernizzi, M. A., & **Ryoo, J. H.** (under revision). An exploration of differences in text features and the influence on adolescents' comprehension. *Reading Research Quarterly.*

B.4 Grants funded

1. Title: Global engagement: Curry, Witwatersrand University, and Copperbelt University partnership for research, and teacher training
    Funding Agency: Curry School of Education, University of Virginia
    Project Members: Frackson Mumba (PI), Associate Prof., University of Virginia
    Ji Hoon Ryoo (Co-PI), Assistant Prof., University of Virginia
    Jennie Chiu (Co-PI), Assistant Prof., University of Virginia
    Vivien Chabalengula (Co-PI), Associate Prof., University of Virginia
    Catherine Bradshaw (Co-PI), Prof., University of Virginia
    Catherine Brighton (Co-PI), Associate Prof., University of Virginia
    Project Budget: 5,000 USD (from May 2017 to May 2020)

2. Title: Utilization of Machine Learning in Propensity Score Methods for Longitudinal and Multilevel Data
    Funding Agency: Curry School of Education, University of Virginia
    Project Member: **Ji Hoon Ryoo (PI)**, Assistant Prof., University of Virginia
    Project Budget: 10,000 USD (from July 2017 to June 2018)

3. Title: Development and Validation of Engineering Design Integrated Science Classroom Observation Protocol
    Funding Agency: Curry School of Education, University of Virginia
    Project Member: Frackson Mumba (PI), Associate Prof., University of Virginia
    Ji Hoon Ryoo (Co-PI), Assistant Prof., University of Virginia
    Jennie Chiu (Co-PI), Associate Prof., University of Virginia
    Larry Richards (Co-PI), Prof., University of Virginia
    Vivien Chabalengula (Co-PI), Associate Prof., University of Virginia
    Project Budget: 10,000 USD (from July 2017 to June 2018)

4. Title: Component-based Item Response Theory
    Funding Agency: Dean's Office of the College of Arts and Sciences, University of Virginia
    Project Members: **Ji Hoon Ryoo (PI)**, Assistant Prof., University of Virginia
    Karen M. Schmidt (Co-PI), Associate Prof., University of Virginia
    Project Budget: 10,500 USD (from February 2017 to January 2018)

5. Title: Developing Teaching Assistants' Pedagogical Knowledge of Inquiry Science Teaching & Instructional Leadership Skills, and Assessing the Impact on Student Learning
    Funding Agency: National Science Foundation
    Project Members: Frackson Mumba (PI), Associate Prof., University of Virginia
    Robert H. Tai (Co-PI), Prof., University of Virginia
    Lindsay Wheeler (Co-PI), Instructor, University of Virginia
    Maksim Bychkov (Co-PI), Instructor, University of Virginia
    Claire Cronmiller (Co-PI), Prof., University of Virginia
    Ji Hoon Ryoo (Senior personnel; 1.0 Summer), Assistant Prof., University of Virginia
    Project Budget: 593,359 USD (from July 2016 to July 2019; Submitted at Jan. 2016)

6. Title: Developing Pre-service Teachers' Pedagogical Content Knowledge for Engineering Design Integrated Science Teaching, and Assessing the Impact on Student Learning
    Funding Agency: National Science Foundation
    Project Members: Frackson Mumba (PI), Associate Prof., University of Virginia
    Ji Hoon Ryoo (Co-PI; 0.5 Summer), Assistant Prof., University of Virginia
    Reid Bailey (Co-PI), Associate Prof., University of Virginia
    Jennifer Chiu (Co-PI), Assistant Prof., University of Virginia
    Project Budget: 300,000 USD (from August 2016 to July 2019)

7. Title: Evaluating Maryland State Policies to Improve School Climate
    Funding Agency: Institute of Education Sciences

Project Members include: Catherine Bradshaw (PI), Prof., University of Virginia
    Andrea Alexander (Co-PI), Specialist for School Climate Initiatives,
      Maryland State Department of Education
    Elise Pas (Co-PI), Assistant Scientist, Johns Hopkins University
    Ji Hoon Ryoo (Co-I; 1.8 Academic), Assistant Prof., University of Virginia
Proposal Budget: 2,756,311 USD (from July 2015 to June 2020)

8. Title: Testing the Efficacy of Double Check: A Cultural Proficiency Professional Development Model in Middle Schools
    Funding Agency: Institute of Education Sciences
    Project Members include: Catherine Bradshaw (PI), Prof., University of Virginia
      Katrina Debnam (Co-PI), Assistant Scientist, Johns Hopkins University
      Ji Hoon Ryoo (Co-I; 0.9 Academic), Assistant Prof., University of Virginia
    Proposal Budget: 3,496,525 USD (from July 2015 to June 2019)

9. Title: Investigation of the Effects of Principal Time-Use on Teacher Instruction and Student Learning across 24 Educational Systems
    Funding Agency: UVa Center for International Studies
    Project Members: **Ji Hoon Ryoo (PI)**, Assistant Prof., University of Virginia
      Moosung Lee (Co-I), Associate Prof., University of Hong Kong
      Dingjing Shi (Collaborator), Graduate Student, University of Virginia
    Proposal Budget: 3,000 USD (from January 2014 to June 2014)

B.5 Grants under review (or revision)

10. Title: Project EXPLORE2: A Project Exploring Educational Outcomes through Accelerated Longitudinal Research
    Funding Agency: National Science Foundation
    Project Members: Robert H. Tai (PI), Prof., University of Virginia
    Ji Hoon Ryoo (Co-PI; 2.0), Assistant Prof., University of Virginia
      John Almarode (Co-PI), Associate Prof., James Madison University
      Katherine Dabney (Co-PI), Assistant Prof., Virginia Commonwealth University
    Project Budget: 1,478,592 USD (from June 1, 2018 to May 31, 2023; Submitted)

11. Title: Professional Development for Elementary Teachers to Promote Mathematical and Scientific Practices
    Funding Agency: National Science Foundation
    Project Members: Kyong Mi Choi (PI), Associate Prof., University of Virginia
    Ji Hoon Ryoo (Co-PI), Assistant Prof., University of Virginia
      Jennifer Chiu (Co-PI), Associate Prof., University of Virginia
      Dae Hong (Co-PI), Assistant Prof., University of Iowa
      Stephanie Morano (Co-PI), Assistant Prof., University of Virginia
    Project Budget: 2,588,699 USD (from July 1, 2018 to June 30, 2022; Submitted)

12. Title: Development of Restorative Practices within the School-Wide Positive Behavior Intervention and Support framework
    Funding Agency: Institute of Education Sciences
    Project Members: Jessica Swain-Bradway (PI), Research Director, Midwest PBIS Network
      Dan Maggin (Co-PI), Assistant Prof., University of Illinois, Chicago
      Catherine Bradshaw (Co-I), Prof., University of Virginia
    Ji Hoon Ryoo (Co-I/Lead Evaluator; 7% of the 4th year), Assistant Prof., University of Virginia
      Jessika Bottani (Co-I), Assistant Prof., University of Virginia
    Project Budget: 399,306 USD (from August 2018 to July 2022; Submitted)

13. Title: Development of Model Evaluation Tools in Generalized Structured Component Analysis (GSCA) & New Applications of GSCA to Latent Variable Mixture Models for Longitudinal Data
    Funding Agency: Psychometric Society

Project Member: **Ji Hoon Ryoo (PI)**, Assistant Prof., University of Virginia
Project Budget: 10,000 USD (from Jan 2018 to Dec 2019; Not funded)

B.6 Presentations

1. **Ryoo, J. H.**, Kush, J., Pas, E., Musci, R., & Bradshaw, C. (2018, May). *Investigation of propensity score matching paradox in longitudinal data*. Paper was presented at the annual convention of the Society for Prevention Research, Washington D.C.

2. **Ryoo, J. H.**, Kush, J., Pas, E., Musci, R., & Bradshaw, C. (2018, May). *Power analysis in multilevel data with variability in the level 1 units*. Paper was presented at the annual convention of the Society for Prevention Research, Washington D.C.

3. Pas, E., **Ryoo, J. H.**, Musci, R., & Bradshaw, C. (2018, May). *Examining student moderators for the effectiveness of school-wide positive behavioral interventions and supports when taken to scale across a state*. Paper was presented at the annual convention of the Society for Prevention Research, Washington D.C.

4. Bradshaw, C., **Ryoo, J. H.**, Pas, E., Kush, J., & Musci, R. (2018, May). *Impacts of state-mandated PBIS implementation on behavior and achievement outcomes*. Paper was presented at the annual convention of the Society for Prevention Research, Washington D.C.

5. **Ryoo, J. H.**, Skeeles-Worley, A. D., & Tai, R. H. (2018, April). *Re-design a measure of student's attitudes toward science: A longitudinal psychometric approach*. Paper was presented at the annual meeting of the American Educational Research Association, New York, NY.

6. Hong, S., **Ryoo, J. H.**, Rhee, G., Kim, S. J., Kwon, J., & Lee, D. (2018, April). *Mediating effects of school-based resources in the relationship between chronic violence victimization and educational outcomes among middle school students in South Korea: Implications for reducing educational inequality*. Paper was presented at the annual meeting of the Korean-American Educational Research Association, New York, NY.

7. Skeeles-Worley, A. D., Tai, R. H., **Ryoo, J. H.**, & Dittrick, C. (2018, March). *The longitudinal relationship of positive and negative science attitudes of middle school students.* Paper was presented at the annual meeting of the National Association for Research in Science Teaching, Atlanta, GA.

8. Skeeles-Worley, A. D., Tai, R. H., **Ryoo, J. H.**, & Dittrick, C. (2018, March). *Preferences for Making/Creating and Discovering Activities Associated with Science Career Aspirations in Grades 3-6.* Paper was presented at the annual meeting of the National Association for Research in Science Teaching, Atlanta, GA.

9. Han, I., **Ryoo, J. H.**, & Choi, H. (2018, March). *Political conservatism at national level in attitudes toward women as business leaders*. Paper was presented at the 2018 Society for Personality and Social Psychology Annual Conventional, Atlanta, GA.

10. Schmidt, K. M., Jung, K., Hwang, H., Meyer, J. P., & **Ryoo, J. H.** (2017, July). *Person scoring in 2PL Model between CB-IRT and FB-IRT*. Paper was presented at the annual meeting of the Psychometric Society, Zürich, Switzerland.

11. **Ryoo, J. H.**, Bradshaw, C., & Kush, J. (2017, July). *Propensity score analysis using super learner for longitudinal data*. Paper was submitted to be presented at the annual meeting of the Psychometric Society, Zürich, Switzerland.

12. **Ryoo, J. H.**, Pas, E. T., Musci, R, & Bradshaw, C. (2017, May). *Comparison of two methods on propensity score analysis in practice*. Paper was presented at the annual convention of the Society for Prevention Research, Washington D.C.

13. **Ryoo, J. H.** (2017, April). *Examination of a cluster effect on model specification in multilevel latent transition analysis*. Paper was presented at the annual meeting of the American Educational Research Association, San Antonio, TX.

14. **Ryoo, J. H.**, & Tai, R. H. (2017, April). *Simulation-based power analysis in latent transition analysis*. Paper was presented at the annual meeting of the American Educational Research Association, San Antonio, TX.

15. Tai, R. H., **Ryoo, J. H.**, Skeeles-Worley, A. D., & Wei, S. (2017, April). *Testing measurement invariance on a FOCIS measure in science education across American and Chinese students*. Paper was be presented at the annual meeting of the American Educational Research Association, San Antonio, TX.

16. Choi, J., **Ryoo, J. H.**, & Harring, J. R. (2017, April). Generalized logistic latent growth models: An inherently nonlinear growth modeling. Paper was presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

17. Barone, N., & **Ryoo, J. H.**, & Kamarunas, E. (2016, October). *How we determine baseline measures and its impact on results: A reflective discussion*. Poster was accepted to be presented at the fNIRS 2016 Conference, Paris, France.

18. **Ryoo, J. H.**, & Hwang, H. (2016, July). *Model selection in GSCA using confirmatory tetrad analysis*. Paper presented at the annual meeting of the Psychometric Society, Asheville, North Carolina.

19. **Ryoo, J. H.**, Jung, K., Hwang, H., Meyer, J. P., Molfese, V., Brown, T. E., & Shi, D. (2016, May). *Application of Generalized Structured Component Analysis to Item Response Theory*. Paper presented at the annual meeting of the Modern Modeling Methods Conference, Storrs, CT.

20. **Ryoo, J. H.**, Shukla, K. D., Pas, E. T., & Bradshaw, C. (2016, May). *1-to-n Propensity Matching Methods*. Paper presented at the annual convention of the Society for Prevention Research, San Francisco, CA.

21. **Ryoo, J. H.**, Tai, R., Mitchell, C., Shi, D., Almarode, J., & Maltese, A. (2016, April). *Examination of Measurement Invariance on a Framework for Observing and Categorizing Instructional Strategies*. Poster presented at the annual meeting of the American Educational Research Association, Washington D.C.

22. Shi, D., & **Ryoo, J. H.** (2016, April). *Detecting Measurement Invariance in SEM: Evaluating Goodness-of-fit indexes*. Poster presented the annual meeting of the American Educational Research Association, Washington D.C.

23. **Ryoo, J. H.**, Wang, C., Swearer, S., & Shi, D. (2015, August). *Investigation of Measurement Invariance on Longitudinal School Bullying Data*. Poster presented at the annual convention of the American Psychological Association, Toronto, Canada.

24. **Ryoo, J. H.**, Jung, K., Hwang, H., & Meyer, J. P. (2015, July). *Component-based Item Response Theory*. Paper presented at the annual meeting of the Psychometric Society, Beijing, China.

25. **Ryoo, J. H.**, Chatterjee, S., & Shi, D. (2015, May). *New Variable Selection Criteria in Model Selection*. Paper presented at the annual meeting of the Modern Modeling Methods Conference, Storrs, CT.

26. Shi, D. & **Ryoo, J. H.** (2015, May). *Estimating the Moderator Effects in Moderated Multiple Regression*. Poster presented at the annual meeting of the Modern Modeling Methods Conference, Storrs, CT.

27. Shi, D., & **Ryoo, J. H.** (2015, April). *Which effect size to report: meta-analysis of effect size in single case design*. Poster presented at the annual meeting of the American Educational Research Association, Chicago, IL.

28. Park, S., Callahan, M. C., & **Ryoo, J. H.** (2015, April). *Assessing Measurement Invariance of the Implicit Theories of Intelligence Scale Between Non-identified and Identified Gifted*. Poster presented at the annual meeting of the American Educational Research Association, Chicago, IL.

29. **Ryoo, J. H.**, Wang, C., & Swearer, S. (2014, August). *Effects of giftedness and student grade on bullying involvement*. Poster presented at the annual convention of the American Psychological Association, Washington D.C.

30. Wang, C., **Ryoo, J. H.**, & Swearer, S. (2014, August). *Longitudinal investigation of bullying and moral disengagement*. Poster presented at the annual convention of the American Psychological Association, Washington D.C.

31. **Ryoo, J. H.**, & Shi, D. (2014, July). *Exploratory latent curve modeling with fractional polynomials*. Paper presented at the annual meeting of the Psychometric Society, Madison, WI.

32. Shi, D., & **Ryoo, J. H.** (2014, July). *Testing the model fit index of structural equation modeling: a simulation study to the performance of the unbiasedness of RMSEA*. Paper presented at the annual meeting of the Psychometric Society, Madison, WI.

33. Jang, B. G., **Ryoo, J. H.**, & McKenna, M. C. (2014, July). *Profiles of reading attitudes among proficient, average, and struggling readers*. Paper presented at the annual meeting of the Scientific Studies of Reading, Santa Fe, NM.

34. **Ryoo, J. H.,** Berg, J., & Bradshaw, C. (2014, May). *Multiple Imputation on Longitudinal and Multilevel Data: A Case Example from a School-based Randomized Trial*. Poster presented at the annual meeting of the Modern Modeling Methods Conference, Storrs, CT.

35. **Ryoo, J. H.,** Molfese, V., Brown, E. T., & Shi, D. (2014, May). *Examination of Population Heterogeneity on the Early Childhood Mathematics: A growth mixture modeling approach*. Poster presented at the annual meeting of the Modern Modeling Methods Conference, Storrs, CT.

36. **Ryoo, J. H.**, Wang, C., & Swearer, S. (2014, April). *Developmental trajectories of bullying and moral disengagement in youth*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

37. Jang, B. G., **Ryoo, J. H.**, & McKenna, M. C. (2013, December). *Multiple dimensions of Korean adolescents' reading attitudes and achievement*. Paper presented at the annual meeting of the Literacy Research Association, Dallas, TX.

38. **Ryoo, J. H.**, Wang, C., & Swearer, S. (2013, August). *Exploration of the change of latent statuses in bullying behaviors across time*. Poster presented at the annual convention of the American Psychological Association, Honolulu, HI.

39. Lee, M., & **Ryoo, J. H.** (2013, June). *Revisiting the Effects of Principal Time-Use on Student*. Paper presented at the annual meeting of the International Association for the Evaluation of Educational Achievement, Singapore.

40. Hong, S., **Ryoo, J. H.**, & Bart, W. (2013, April). *Effectiveness of School-Wide Positive Behavioral Interventions and Supports on Special Education Student Achievement Growth in Schools in Poverty Settings*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

41. Hong, S., Lee, M., Noh, J., & **Ryoo, J. H.** (2013, April). *The Mediation Effect of Student Teacher Attitude toward Inclusion for Students with Autism: A Structural Equation Modeling Approach*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

42. Jang, B. G., Kim, J., **Ryoo, J. H.** & McKenna, M. C. (2013, April). *Comparing Structural Differences in Reading Attitudes, and Reading Achievements between U.S. and Korean Adolescents: Finding from PISA 2009*. Poster presented at the American Educational Research Association, San Francisco, CA.

43. Torquati, J., Raikes, H., Welch, G., **Ryoo, J. H.**, & Tu, X. (2013, April). *Investigating Thresholds of Child Care Quality Using a GAM Analytic Approach*. Paper presented at the biennial meeting of the Society for Research in Child Development, Seattle, WA.

44. Rhee, J., Johnson, K. K. P., and **Ryoo, J. H.** (2012, November). *Exploring Relationship between Self-Brand Congruence and Brand Commitment*. Poster presented at the annual meeting of the International Textile & Apparel Association, Honolulu, HI.

45. **Ryoo, J. H.** and Swearer, S. (2012, August). *Exploration of the change of latent statues in self-esteem*. Poster presented at the annual convention of the American Psychological Association, Orlando, FL.

46. Sheridan, S., Minke, K. M., Rispoli, K. M., **Ryoo, J. H.**, Kim, E. M., and Koziol, N. (2012, August). *Congruence within the Parent-Teacher Relationship: Associations with Children's Functioning*. Poster presented at the annual convention of the American Psychological Association, Orland, FL.

47. Hong, S., **Ryoo, J.**, and Bart, W. B. (2012, April). *The Effects of SW-PBIS on Special Education Student Achievement Growth*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, British Columbia, Canada.

48. Hong, S., **Ryoo, J. H**, and Bart, W. (2012, April). *Investigating the Effectiveness of SW-PBIS on School-level Achievements*. Paper presented at the annual convention and expo of the Council for Exceptional Children, Denver, CO.

49. Hong, S., **Ryoo, J. H**, and Bart, W. (2012, April). *Effects of SW-PBIS on School-level Student Achievement by Using Propensity Score Matching*. Poster presented at the annual convention and expo of the Council for Exceptional Children, Denver, CO.

50. Welch, G., and **Ryoo, J. H.** (2011, November). *Identifying Thresholds of Quality in Early Child Care and Education: A Non-parametric Approach*. Paper presented at the annual meeting of the Child Care Policy Research consortium, Washington D.C.

51. Torquati, J., Raikes, H., Welch, G., **Ryoo, J. H.**, and Tu, X. (2011, November). *Testing Thresholds of Quality on Child Outcomes Globally and in Subgroups*. Paper presented at the annual meeting of the Child Care Policy Research consortium, Washington D.C.

52. **Ryoo, J. H.** and Hong, S. (2011, September). *Investigating the Effectiveness of SW-PBIS on School's Accountability at Both Elementary and Middle Schools*. Paper presented at the fall conference of the Society for Research on Educational Effectiveness, Washington D.C.

53. **Ryoo, J.** (2011, July). *Measurement invariance in longitudinal data with a developmental latent trait over time*. Paper presented at the annual meeting of the Psychometric Society, Hong Kong.

54. **Ryoo, J.** and Reynolds, A. (2011, July). *Fitting the linear mixed model in the CLS data with static and dynamic predictors*. Paper presented at the annual meeting of the Psychometric Society, Hong Kong.

55. **Ryoo, J**. (2011, May). *Longitudinal model selection of statewide achievement tests at school level by using the Linear Mixed Model*. Paper presented at the annual meeting of the Modern Modeling Methods Conference, Storrs, CT.

56. **Ryoo, J.** and Welch, G. (2011, May). *Fitting Generalized Fractional Polynomial Model incorporated with the Generalized Additive Model into Longitudinal Data*. Paper presented at the annual meeting of the Modern Modeling Methods Conference, Storrs, CT.

57. Hong, S., **Ryoo, J.**, and Bart, W. (2011, April). *Analysis of the Effect of Performance Pay for Teachers on Special Education Student Group Achievement in Mathematics and Reading*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

58. Raikes, H., Torquati, J., Welch, G., Tu, X., and **Ryoo, J.** (2011, April). *Investigating Thresholds of Child Care Quality Predicting Children's Development*. Paper presented at the biennial meeting of the Society for Research in Child Development, Montreal, Canada.

59. Tu, X., Raikes, H., Torquati, J., Welch, G., and **Ryoo, J.** (2011, April). *Factor Analyses of Quality Measures.* Paper presented at the biennial meeting of the Society for Research in Child Development, Montreal, Canada.

60. **Ryoo, J. H.** (2010, July). *Model Selection with the Linear Mixed Effects Model for Longitudinal Data*. Paper presented at the annual meeting of the Psychometric Society, Athens, GA.

61. Hong, S., **Ryoo, J. H.**, and Bart, W. (2010, May). *A Longitudinal Study of Performance Pay: Examining special education student group achievement*. Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.

62. Hong, S., **Ryoo, J. H.**, and Bart, W. (2010, May). *A Longitudinal Study of Performance Pay for Special Education Teachers in Middle and High Schools*. Poster presented at the annual convention and expo of the Council for Exceptional Children, Nashville, TN.

63. **Ryoo, J. H.** (2009, August). *Exploration of dimensionality of the CAOS test*. Poster presented at the annual meeting of Joint Statistical Meeting, Washington D.C.

64. Hong, S., **Ryoo, J. H.**, and Bart, W. (2009, April). *A Preliminary Longitudinal Study of Performance Pay for Teachers: Examining Elementary School Performance in Mathematics and Reading*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

65. **Ryoo, J. H.** and Seo, D. G. (2008, July). *Efficiency of Bayesian Estimation with Gibbs Sampling in IRT models*. Paper presented at the annual meeting of the Psychometric Society, Durham, NH.

66. Hong, S. and **Ryoo, J. H.** (2008, March). *The Effect of Quality Compensation for Teaching on Student Performance in math and reading*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

67. **Ryoo, J. H.** (2000, October). *Identities for Multiple Zeta Values*. Paper presented at the annual meeting of the Maine/Quebec Number Theory Conference, Quebec, Canada.

B.7 Book review

1. **Ryoo, J. H.** & Shi, D. (2015). [Review of the book *Discovering Structural Equation Modeling Using Stata: Revised Edition*, by Acock, A. C. (2013). College Station, TX: Stata Press.] *Structural Equation Modeling: A Multidisciplinary Journal, 22(1),* 162-165. DOI:10.1080/10705511.2014.935845

2. **Ryoo, J. H.** (2012). [Review of the book *Longitudinal Data Analysis: A Handbook of Modern Statistical Methods*, by Fitzmaurice, G., Davidian, M., Verbeke, G., & Molenberghs, G. (Eds.). (2008). Boca Raton, FL: Chapman & Hall/CRC.] *Psychometrika, 77(2),* 423-424. DOI:10.1007/S11336-012-9250-Z

B.8 Technical reports

1. Lee, M., Spinks, J., Wright, E., Dean, J., & **Ryoo, J. H.** (2017). *A Study of the Post-Secondary Outcomes of IB Diploma Alumni in Leading Universities in Asia Pacific: Report for the International Baccalaureate Organization*. Canberra: University of Canberra.

2. Kim, E. M., Minke, K. M., Sheridan, S. M., Koziol, N., **Ryoo, J. H.**, & Rispoli, K. M. (2012). *Congruence within the parent-teacher relationship: Associations with children's functioning* (CYFS Working Paper No. 2012-2). Retrieved from the Nebraska Center for Research on Children, Youth, Families and Schools website: cyfs.unl.edu

3. **Ryoo, J. H.** and Chatterjee, S. (2010). *Simulation Study in the Linear Regression*. Technical Report #678, School of Statistics, University of Minnesota

4. **Ryoo, J. H.** (2008). *Mean Growth Curve Models for Achievement Scores in Chicago Longitudinal Study*. Internal report, Institute of Child Development, University of Minnesota

C. Teaching and Services

C.1 Teaching
C.1.1 Teaching experiences

Aug. 2012 – current	Curry School of Education, University of Virginia	*Faculty*
Jan. 2012 – May 2012	Dept. of Educational Psychology, University of Nebraska	*Postdoctoral Fellow*
Feb. 2010 – July 2010	Dept. of Math, Stat, and Comp. Sciences, St. Olaf College, MN	*Adjunct Faculty*
Aug. 2009 – May 2010	Dept. of Math, Inver Hills Community College, MN	*Adjunct Faculty*
Sept. 2009 – Dec. 2009	School of Statistics, University of Minnesota	*Teaching Specialist*
Aug. 2009 – Dec. 2009	Dept. of Math, Century College, MN	*Adjunct Faculty*
Sept. 2006 – May 2009	Dept. of Educational Psychology, University of Minnesota	*Graduate Instructor / TA*
Sept. 2001 – Aug. 2006	School of Math, University of Minnesota	*Graduate Instructor / TA*

C.1.2 Course instruction

University of Virginia	(B) EDLF 8300	Experimental Design: Stat II (Fall, 2012; 3 cr.)
	(B) EDLF 8361	Structural Equation Modeling (Spring, 2013; 3 cr.)
	(B) EDLF 7310	Educational Statistics: Stat I (Fall, 2013; 3 cr.)
	(B) EDLF 8360	Multilevel Modeling (Fall, 2013; 3 cr.)
	(B) EDLF 8300	Experimental Design: Stat II (Spring, 2014; 3 cr.)
	(B) EDLF 8310	Correlation & Regression: Stat III (Fall, 2014; 3 cr.)
	(B) EDLF 8300	Experimental Design: Stat II (Spring, 2015; 3 cr.)
	(B) EDLF 8361	Structural Equation Modeling (Spring, 2015; 3 cr.)
	(B) EDLF 8310	Correlation & Regression: Stat III (Fall, 2015; 3 cr.)
	(B) EDLF 7420	Experimental Design: Stat II (Spring, 2016; 3 cr.)
	(B) EDLF 8310	Correlation & Regression: Stat III (Fall, 2016; 3 cr.)
	(B) EDLF 8360	Multilevel Modeling (Fall, 2016; 3 cr.)
	(B) EDLF 7420	Experimental Design: Stat II (Spring, 2017; 3 cr.)
	(B) EDLF 8361	Structural Equation Modeling (Spring, 2017; 3 cr.)
	(B) EDLF 7420	Experimental Design: Stat II (Spring, 2017; 3 cr.)
	(B) EDLF 7420	Experimental Design: Stat II (Spring, 2018; 3 cr. – Sec 1)
	(B) EDLF 7420	Experimental Design: Stat II (Spring, 2018; 3 cr. – Sec 2)
University of Nebraska	(B) EDPS 991	Longitudinal Data Analysis (Spring, 2012; 3 cr.)
University of Minnesota	(P) MATH 1271	Calculus I (Summer, 2002; 4 cr.)
	(P) MATH 1272	Calculus II (Summer, 2006; 4 cr.)
	(B) EPSY 5261	Introductory Statistical Methods

		(Graduate Level and Online Course; Spring, 2009; 3 cr.)
	(M) STAT 3011	Introduction to Statistical Analysis (Fall, 2009; 3 cr.)
St. Olaf College, Minnesota	(M) Stat 212	Statistics for the Science (Spring, 2010; 3 cr.)
	(M) Stat 212	Statistics for the Science (Summer, 2010; 3 cr.)
Inver Hills Community College, Minnesota	(D) Math 0090	Essential Mathematics (Fall, 2009; 3 cr.)
	(D) Math 0093	Accelerated Combined Math 0092/Math 0094 (Fall, 2009; 5 cr.)
	(D) Math 1101	Mathematics for Liberal Arts (Fall, 2009; 3 cr.)
	(D) Math 0093	Accelerated Combined Math 0092/Math 0094 (Spring, 2010; 5 cr.)
	(D) Math 0098	Accelerated Combined Math 0094/Math 0099 (Spring, 2010; 5 cr.)
	(D) Math 0099	Intermediate Algebra (Spring, 2010; 3 cr.)
	(D) Math 1118	College Algebra (Spring, 2010; 3 cr.)
Century College, Minnesota	(D) Math 0010	Basic Mathematics (Fall, 2009; 3 cr.)
	(D) Math 1025	Statistics (Fall, 2009; 3 cr.)

Note: Letter in ( ) indicates type of virtual classroom management programs such as
   (P) for personal website, (B) for Blackboard, (M) for Moodle, (D) for Desire2Learn, and
   (N) for class using no virtual classroom management programs

C.2 Professional services

Sept. 2017 – Current	*Editorial Board of Exceptional Children* Editors, John Wills Lloyd & William Therrien
Apr. 2017 – Apr. 2021	*KAERA Treasurer (2017-18 with President, Soo-yong Byun); Vice President (2018-19 with President, Eun-Ok Baek); President (2019-20); Immediate Past President (2020-21)* Korean-American Educational Researchers Association (KAERA)
Jan. 2016 – Dec. 2018	*Editorial Board of School Psychology Quarterly* Editor, Rich Gilman
Sept. 2010 – Current	*Journal Peer Reviewer* Applied Psychological Measurement, Exceptional Children, Exceptionality, Learning and Individual Differences, Structural Equation Modeling: A Multidisciplinary Journal, Child Development
Apr. 2013 – Current	*Bruce Gansneder Award Committee* Curry School of Education, University of Virginia
Apr. 2011 – Apr. 2014	*AERA Division D Quantitative Dissertation Award Committee: Co-chair in 2012-2013: Chair in 2013-2014* American Educational Research Association (AERA)
Sept. 2010 – May 2012	*Member of Seminar Organizers* *Research Methodology Series:* Providing information to social science researchers about research methodology and statistical approaches Nebraska Center for Research on CYFS University of Nebraska, Lincoln

C.3 Honors & Awards

May 2017	*2017 Early Career Preventionists Travel Award* Society for Prevention Research
Jan. 2017	*2016 School Psychology Quarterly Service Award* Division of School Psychology American Psychological Association
May 2016	*2016 Minority Annual Meeting Travel Award* Society for Prevention Research

Aug. 2014	*2013 Journal of School Psychology Article of the Year* Society for the Study of School Psychology American Psychological Association
July 2010 – Aug. 2011	*2011 Outstanding Postdoc Award* Office of Postdoctoral Studies University of Nebraska-Lincoln
Aug. 2008 – May 2009	*The Psych Foundations/QME Students Research Award* Department of Educational Psychology University of Minnesota
Aug. 2006 – May 2007	*Jack Merwin Graduate Assistantship Award* Department of Educational Psychology University of Minnesota
Aug. 2005 – May 2006	*Excellent Teaching Award* The School of Mathematics University of Minnesota
Aug. 2000 – May 2001	*John and Beverly Toole Award for acting president of Pi Mu Epsilon* *(mathematics Honorary Society)* Department of Mathematics and Statistics University of Maine