Ryan Seth Jones

Middle Tennessee State University   Ryan.jones@mtsu.edu
College of Education   Phone: 423-716-1450
MTSU Box 91 COE 388
Murfreesboro, TN 37132

EDUCATION

Ph.D.   Mathematics & Science Education
Vanderbilt University
2015

Dissertation Title: *A Construct Modeling Approach to Measuring Fidelity in Data Modeling Classrooms*

M.Ed.   Mathematics Education
Vanderbilt University
2010

B.S.   Mathematics Education
Tennessee Technological University
2004

PUBLICATIONS

Jones, R. S., Banilower, E., & Grover, S. (2023). Teacher knowledge and practices for assessment. In C. J. Harris, E. Wiebe, S. Grover, & J. W. Pellegrino (Eds.), Classroom-based STEM assessment: Contemporary issues and perspectives (pp. 83–94). Community for Advancing Discovery Research in Education, Education Development Center, Inc.

Jones, R.S. & Rosenberg, J.M. (2022). Characterizing whole class discussions about data and statistics with conversation profile analysis. *Journal of Mathematical Behavior.* Elsevier. New York, N.Y.

Jones, R.S., Grinath, A., & Scott, F.* (2022). The multi-Dimensional Learning Goals for Making Inferences with Data. In Short, P. (Ed.), Age of Inference: *Cultivating a scientific mindset.* Information Age Publishing. Charlotte, N.C.

Reid, J. W.*, Quinn, C. M.*, Jia, Z.*, **Jones, R. S.**, & Grinath, A. S. (2021). Small Instructional Changes to Emphasize Data Modeling Practices. *The Journal of College Science Teaching.*

Rosenberg, J. M., Lawson, M. A., Anderson, D. J., Rutherford, T., & **Jones, R. S.** (2020) Making data science "count": Data science and Learning, Design, and Technology research. In E. Romero-Hall (Ed.), *Research Methods in Learning Design & Technology.* Routledge: New York, NY.

Jones, R.S., Jia, J.*, & Bezaire, J. (2020). Giving birth to inferential reasoning. *Mathematics Teacher: Learning and Teaching PK–12.*

Smith, W. M., Callahan, K. M., Strayer, J. F., **Jones, R. S.,** & Augustyn, L. C. (Eds.). (2019). Proceedings of the eighth annual Mathematics Teacher Education Partnership conference. Washington, DC: Association of Public and Land-grant Universities.

Teeters, L. A., Singer-Gabella, M., **Jones, R. S.**, Escarfuller, J., & Heerman, W. J. (2018). Operationalising agency: a personalised approach to public health. *Gateways: International Journal of Community Research and Engagement*, 11(1), 73-89.

Arnold, P., Confrey, J., **Jones, R. S.**, Lee, H.L., & Pfannkuch, M. (2018). Statistics Learning Trajectories. In D. Ben-Zvi., K. Makar, & J. Garfield (Eds.), *International handbook of research in statistics education*, Springer International Handbooks of Education. Springer, Cham.

Jones, R. S., Lehrer, R., & Kim, M. J. (2017). Critiquing statistics in student and professional worlds. *Cognition and Instruction*, 35(4), 1-20.

Confrey, J., **Jones, R. S.**, & Gianopulos, G. (2015). Challenges in Modeling and Measuring Learning Trajectories. *Measurement: Interdisciplinary Research and Perspectives*, *13*(2), 100-105.

Lehrer, R., Kim, M.J., & **Jones, R. S.** (2011). Developing conceptions of statistics by designing measures of distribution. *ZDM*, *43*(5)

*Students

CONFERENCE PRESENTATIONS

Jones, R.S. (2023). *Mathematizing the World: The Interdisciplinary Practice of Explaining Variability in Data.* IES Math Summit virtual Presentation.

Jones, R.S., Salisbury, S.*, Scott, F.*, Klukowski, L.* (2023). *Integrated Data Project: The Interdisciplinary Practice of Explaining Variability in Math and Science Investigations.* NSF DRK-12 PI Meeting. Washington, D.C.

Rosenberg, J. & Jones, R.S. (2023). *Learning and Agency.* In Foundations of K-12 Data Science Education Symposium. American Educational Research Association. Chigaco, IL.

Jones, R.S., Banilower, E., & Grover, S. (2023). *Teacher Knowledge and Practices for Assessment.* American Educational Research Association. Chigaco, IL.

Jones, R.S., Salisbury, S.*, Scott, F.*, Shepherd, L.* (2022). *Teachers' goals for seeing with data.* Psychology of Mathematics Education North America Annual Conference, Nashville, TN.

Jones, R. S. & Rosenberg, J. (2020). *Studying whole class discussions at scale with conversation profile analysis.* International Conference of the Learning Sciences. Nashville, TN. (Canceled and held virtually)

Jones, R. S. & Grinath, A. (2020). *Designing interdisciplinary arrangements and infrastructures.* International Conference of the Learning Sciences. Nashville, TN. (Canceled and held virtually)

Jones, R.S., Grinath, A., Google, A.*, & Jia, Z.* (2020). *Engaging students with uncertainty through repeated measure of biological qualities.* American Educational Research Association Annual Meeting, San Francisco, CA. (Canceled and held virtually)

Jones, R.S. & Rosenberg, J. (2020). *Latent Class Modeling of Whole Class Discussions about Data, Statistics, and Probability.* American Educational Research Association Annual Meeting, San Francisco, CA. (Canceled and held virtually)

Lovett J., Jones, R.S., & Duncan, M. (2019). *Teachers' engagement in a competing models informal inference task.* Psychology of Mathematics Education North America Annual Conference, St. Louis, MO.

Weiland, T., Mojica, G., Engledowl, C., Jones, R.S. (2019). *Statistics education: (re)framing past work for taking a holistic approach to the future.* Psychology of Mathematics Education North America Annual Conference, St. Louis, MO.

Reid, J. W.*, Quinn, C. M.*, Grinath, A. S., Jones, S., & Jia, Z.* (2019). *Small teaching practices for problematizing the quantitative nature of biology in non-science majors biology laboratories.* Poster presented at National Association for Research in Science Teaching Annual Conference, Baltimore, MD.

Grinath, A., Jones, R.S., Whitworth, C.*, Google, A.*, Morphis, H.* (2019). *3D Biology Lessons: Designing Across Biology, Data Modeling, and Argumentation Learning Goals.* TN STEM Education Research Conference. Murfreesboro, TN.

Jones, R.S., Grinath, A., Jia, Z.*, Czap, L.*, & Google, A.* (2019). *Leveraging Students' Ideas about Measurement and Variability in Biology.* TN STEM Education Research Conference. Murfreesboro, TN.

Jones, R.S., Lovett, J., Google, A.*, & Duncan, M. (2019). *Middle School Teachers' Statistical Inventions and Inferences about Variability.* Association of Mathematics Teacher Educators, Orlando, FL.

Lovett, J., Jones, R.S., Google, A.*, Matuszewski, A. (2019). *Blending Traditional Professional Development with a MOOC-ED to Support Middle School Teachers in Teaching Statistics.* Association of Mathematics Teacher Educators, Orlando, FL.

Brady, C., Jones, R.S., Nichols, I.*, & Wisittanawat, P.* (2018). *Positive Interdependence Through Data Modeling.* Psychology of Mathematics Education North America Annual Conference, Greenville, SC.

Reid, J.*, Grinath, A., Jones, R.S., Quinn, C., & Jia, Z.* (2018). In the midst of variability: Small changes to foreground the quantitative nature of biology. Poster presented at National Association of Biology Teachers Annual Professional Development Conference, San Diego, CA.

Jones, R.S., Lovett, J., Google, A.*, & Matuszewski, A. (2018). *Integrating face-to-face professional development and a MOOC-Ed to develop teachers' statistical knowledge for teaching.* Conference presentation at TN STEM Education Research Conference. Murfreesboro, TN.

Jones, R.S., (2017). *Visualizing Practice with Data.* Psychology of Mathematics Education North America Annual Conference, Indianapolis, IL.

Jones, R.S., Lovett, J., Google, A.*, & Matuszewski, A., (2017). *Integrating Face-to-face Professional Development and a MOOC-ED to Develop Teachers' Statistical Knowledge.* Psychology of Mathematics Education North America Annual Conference, Indianapolis, IL.

Jones, R. S., Jia, J.* (2017). *Supporting students' inferential reasoning through building, testing, and revising models.* Tennessee STEM Education Conference, Murfreesboro, TN.

Jones, R. S., (2017). *What Does STEM Literacy Mean, and How Do We Know If Students Are Developing It?.* AdvancED TENNESSEE/Middle Tennessee State University's STEM SUMMIT II, Murfreesboro, TN.

Jones, R. S., (2017). *Measuring Students' Data Modeling Conversations.* National Council of Teachers of Mathematics Research Conference, San Antonio, TX.

Confrey, J., Jones, R. S., Gianopulos, G. & Shah, M. (2016). *Scaffolding coherence in a digital learning system accessing open source mathematics curriculum materials.* Paper presentation at the American Educational Research Association Annual Conference, Washington, D.C.

Confrey, J., Jones, R. S., & Gianopulos, G. (2016). *Challenges in modeling and measuring learning trajectories.* Paper presentation at National Council of Measurement in Education 2016, Washington, D.C.

Confrey, J., Shah, M., Hennessey, M., & Jones, R. S. (2016). *Linking digital diagnostic assessments to indicators on learning trajectories to meet students' diverse needs.* Paper presentation at the National Council of Supervisors of Mathematics Annual Conference, Oakland, CA.

Jones, R. S., Confrey, J., Hennessey, M., Shah, M. (2016). *Looking for student thinking in middle grades data and statistics*. Paper presentation at the National Council of Supervisors of Mathematics Annual Conference, Oakland, CA.

Jones, R. S. & Confrey, J. (2015). *Making sense of data and variability with students.* Presentation at the North Carolina Council of Teachers of Mathematics, Greensboro, NC.

Jones, R. S. & Confrey, J. (2015). *Learning maps that link CCSS to student thinking.* Presentation at the North Carolina Council of Teachers of Mathematics, Greensboro, NC.

Shah, M., Confrey, J., & Jones, R. S. (2015). *Coherent learning experiences: Accessing internet resources through a learning map aligned to the common core standards.* Paper presentation at the Psychology of Mathematics Education North American Chapter Annual Conference, East Lansing, MI.

Jones, R. S. (2014). *Fidelity of implementation in data modeling classrooms: a construct driven approach to fidelity measurement.* Paper presentation at the National Council of Teachers of Mathematics Research Conference, New Orleans, LA.

Lehrer, R., Jones, R. S., & Kim, M. J. (2014). *Model-based informal inference.* Paper presented at the 9th International Conference on Teaching Statistics, Flagstaff, AZ.

Lehrer, R., & Jones, S. (2014). *Construct maps as boundary objects in the trading zone.* In W. P. Fisher Jr. (Chair), Session 3-A: Rating Scales and Partial Credit, Theory and Applied. International Objective Measurement Workshop. Philadelphia, PA.

Jones, R.S. (2013). *Validity as Process: A Construct Driven Measure of Fidelity of Implementation.* Paper presentation at the Society for Research on Educational Effectiveness, Washington, D.C.

Jones, R. S. (2013). *A construct modeling approach to measuring fidelity.* In R. Lehrer (chair), A learning progression emerges in a trading zone of professional community and identity. Symposium conducted at the 2013 meeting of the American Educational Research Association, San Francisco, CA.

Lehrer, R., Jones, R.S., Phaff, E., & Shinohara, M. (2013). *Modeling data: a learning progression for supporting the development of statistical reasoning.* In M. Wilson (chair), Building learning progressions for math and science learning. Symposium conducted at the 2013 meeting of the American Educational Research Association, San Francisco, CA.

Lehrer, R. & Jones, R. S. (2012). *Spadework prior to the conduct of an efficacy study.* Presentation for IES principal investigator meeting, Washington, D.C.

Jones, R. S., Lehrer, R., & Kim, M.J. (2012). *Professional and student visions of statistics*. In R. Lehrer (chair), Designing for and representing the development of epistemic practices in classroom communities. Symposium conducted at the 2012 meeting of the American Educational Research Association, Vancouver, B.C.

Jones, S. R. & Kim. M. J. (2011). *Enacting a New Curriculum: A Teacher's First Attempt with Data Modeling.* Poster presented at the 2011 meeting of the National Council of Teachers of Mathematics Research Pre-session, Indianapolis, IN.

*Students

AWARDS

Otto Bassler Award for Outstanding Dissertation
> Awarded by the Teaching, Learning, & Diversity department at Peabody College, Vanderbilt University

Bonsal Applied Education Dissertation Research Grant

Awarded by Dean Camilla Benbow, Peabody College, Vanderbilt University
2013
Edmund W. Gordon MacArthur Foundation/ETS Fellowship For 21st Century Learning and Assessment
Awarded by Jim Gee, University of Arizona, & Robert Mislevy, ETS
2013
Experimental Education Research Training Pre-doctoral Fellowship Award
Awarded by IES Training Program PIs David Cordray & Dale Farran, Vanderbilt University
2010
Peabody Dean's Tuition Award
Awarded by Dean Camilla Benbow, Peabody College, Vanderbilt University
2009

PROFESSIONAL EXPERIENCE

Associate Professor
Middle Tennessee State University
August 2022 – Present
Assistant Professor
Middle Tennessee State University
August 2016 – 2022
Research Scientist
North Carolina State University
January 2015 – May 2016
Research Assistant
Vanderbilt University
June 2009 – December2014
Middle School Mathematics Teacher
University School Nashville
2009 – 2010
High School Mathematics Teacher
Cleveland High School
2005 – 2009
High School Mathematics Teacher
Upperman High School
2004 – 2005

FUNDED RESEARCH PROJECTS

Principal Investigator
CAREER: Supporting Model Based Inference as an Integrated Effort Between Mathematics and Science
National Science Foundation Faculty Early Career Development (CAREER) Program: DRK-12 ($703,903)
February, 2020 – January, 2025
Principal Investigator

Group Based Collaborative Computing to Support Modeling and Argumentation in Large Lecture Classes
MTSU ITD Technology Innovation Grant ($21,980)
2019

Co-Principal Investigator
3D Biology Learning
MTSU Library, Improving technology with teaching grant ($2,500)
2018

Co-Principal Investigator
Engaging Students in Data Modeling
Tennessee Higher Education Commission, ITQ grant ($75,000)
2017

RESEARCH EXPERIENCE

Learning Scientist/Math Educator
Scaling Up Digital Design Studies: Learning Maps
Gates Foundation development study
2015-Present

Edmund W. Gordon MacArthur Foundation/ETS Fellow
National mentoring fellowship led by Jim Gee (Arizona State University), Robert Mislevy (ETS), and Edmund Gordon (Teacher's College, Columbia University)
2013-Present

Institute of Educational Sciences Predoctoral Fellow
Interdisciplinary research training program
2009-2014

Research Assistant
Formative Assessment Delivery System
IES funded measurement study
Principal investigator: Mark Wilson & (Co-PI) Richard Lehrer
2012-2014

Data Modeling Supports the Development of Statistical Reasoning
IES funded efficacy study
Principal Investigator: Richard Lehrer
2010-2014

Assessing Data Modeling
IES funded measurement project
Principal Investigators: Richard Lehrer, Leona Schauble, & Mark Wilson
2009-2011

TEACHING AND MENTORING EXPERIENCE

MTSU Teaching
SPSE 7070, Learning Theories in Math & Science Education Research
SPSE 7180, Qualitative Research and Evaluation Methods
SPSE 7220, Advanced Educational Technologies

SPSE 7010, Educational Research Methodologies

MSE 7800, Teaching and Learning Mathematics and Science

YOED 3550, Classroom Interactions

YOED 4050, Project-Based Instruction

Vanderbilt Teaching

MTED 2200, Mathematics for Elementary Teachers

TA for Dr. Melissa Gresalfi

Fall 2014

EDUC 3120, Learning and Instruction

TA for Dr. Melissa Gresalfi

Fall 2014

MTED 3640, Teaching and Learning Statistics and Probability in Middle Schools

Co-Taught with Emily Shahan

Spring 2013

Leadership Alliance Mentor

Mentored undergraduate student, Charles Wilkes, during summer research internship

Summer 2012

Vanderbilt Undergraduate Summer Research Fellowship Mentor

Mentored undergraduate student, Megan Wongkamalasai, during summer research internship

Summer 2012

Middle School Mathematics Teacher

University School of Nashville

2008-2009

Secondary Mathematics Teacher

Cleveland High School, Cleveland TN

2005-2009

Upperman High School, Baxter TN

2004-2005