

Lance M. Kruse, Ph.D.

www.lancekruse.net

lancekruse1@gmail.com

EDUCATION

Ph.D. **University of Toledo**

Foundations in Educational Research and Measurement Aug. 2016 – Dec. 2019
Advisor: Gregory Stone, Ph.D.
Dissertation: Item-Reduction Methodologies for Complex Educational Assessments: A Comparative Methodological Exploration

M. Ed. **Bowling Green State University**

Master of Education: Curriculum and Teaching Aug. 2016
Advisor: Jonathan Bostic, Ph.D.
Project: Exploring Protocol-Centered Professional Development about the Standards for Mathematical Practice

B. S. **Bowling Green State University**

Secondary Education Integrated Mathematics, *summa cum laude* May 2015

PROFESSIONAL EXPERIENCE

North Carolina State University

2019 – Present

Research Scholar, *STEM Education*

- Assistant Director, *AEOP Evaluation*
 - Provide research and evaluation support for Army Educational Outreach Program;
 - Lead the management and administration of program databases for AEOP;
 - Conduct survey development and administration, interviews, site visits, and observations for AEOP evaluations;
 - Compose annual evaluation reports.
- Research Analyst, *Purdue Cybersecurity Apprenticeship Program*
 - Compose reporting documentation for program partners;
 - Aggregate program data from partners into comprehensive reporting database.
- Research Analyst, *Friday Institute Professional Learning Online Modules*
 - Conduct quantitative statistical analysis for survey, assessment, and course activity data for course evaluation;
 - Implement A/B testing protocol to evaluate program design and effectiveness;
 - Conduct interviews for participating students related to program effectiveness.
- Research Analyst, *NCSU Artificial Intelligence Academy*
 - Lead the management and administration of applicant and participant data;
 - Compose reporting documentation for program partners;
 - Aggregate program data into comprehensive reporting database.
- Research Analyst, *Indiana GEAR UP Program*
 - Aggregate student performance data into comprehensive SPSS database;
 - Evaluate program performance across student performance indicators;
 - Compose technical evaluation report for district, school, and program performance.

MetriKs Amerique

2017 – Present

Research Associate

- Assist in program evaluation, measurement, and research projects for research grants, non-profits, and educational systems.

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AEOP Alumni Management Team Member

- Manage the Army Education Outreach Program (AEOP) Alumni database, which houses participant information from the 11 national AEOPs;
- Annually collect, clean, and upload new participant information into the existing database;
- Perform complex database searches to support programmatic efforts;
- Assist in writing evaluation reports for the AEOP Alumni Management Team.

Psychometric Consultant

- Lead meeting with medical board members responsible for test development;
- Conduct and review psychometric analysis of previous test results to guide test revision and new item development;
- Apply psychometric principles to high-stakes test development.

Clarity Assessment System

2016 – 2017

Psychometric Consultant Internship

- Intern to Clarity Assessment Systems, a national provider of high-stakes test development services, primarily to medical organizations;
- Assisted in conducting meeting with medical board members for test development;
- Conducted and reviewed psychometric analysis of previous test results to guide test revision and new item development;
- Application of psychometric principles to medical high-stakes test development.

CONSULTING EXPERIENCE

Perkins Eastman, DC & Drexel University

2019 - Present

Statistical and Research Methodologist Consultant

- Research consultant for Perkins Eastman and Drexel University, who are the Co-PIs for the 2019 Latrobe Grant research project;
- Advise and design a cross-sectional study evaluating the impact of renovated schools in the Washington D.C. and Baltimore City Public School districts;
- Advise and design data collection tools including surveys, interview protocols, and school archival data;
- Perform descriptive and inferential statistical analysis for occupant perception survey results, school performance data, and correlational analysis;
- Write comprehensive technical report sharing the findings from the analysis.

Bowling Green State University

2019 - 2020

External Evaluator

- Evaluate state-funded planning grant for developing a new inclusive middle childhood education program at Bowling Green State University;
- Conduct meeting observations and evaluations;
- Evaluate the team's progression towards fulfilling their state deliverables;
- Conduct individual leadership team interviews for evaluating the team's progress;
- Write comprehensive evaluation reports to convey the findings to the leadership team.

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Perkins Eastman, DC

2018

External Evaluator

- Hired as external evaluator for Perkins Eastman cross-sectional study evaluating the impact of renovated schools in the Washington D.C. Public School district;
- Performed descriptive and inferential statistical analysis for occupant perception survey results, school performance data, and correlational analysis;
- Created comprehensive technical report sharing the findings from the analysis.

Purdue University

2017 – 2019

Research Consultant

- Conduct site visits for a program evaluation for the Army Educational Outreach Program, being overseen by Purdue University;
- Plan and conduct participant observations, focus-group interviews, and one-on-one interviews with student participants and local program coordinators;
- Conduct phone-interviews with student and mentor participants.

TEACHING EXPERIENCE

Adjunct Assistant Professor

Drexel University

2019 – Present

School of Education

Department of Teaching Learning and Curriculum

- EDU 780: Capstone Research
- EDUC 522: Evaluation of Instruction

Adjunct Assistant Professor

Bowling Green State University

2017 – Present

College of Education and Human Development

School of Educational Foundations, Leadership and Policy

- EDFI 6410: Statistics in Education
- EDFI 6420: Educational Research
- EDFI 6450: Using K-12 Assessment Data

Graduate Assistant

Benjamin Drake Wright Scholar Program

2016 – 2019

Metriks Amerique, CEO Gregory Stone, Ph. D.

Department of Educational Foundations & Leadership

University of Toledo

- Assist with research, measurement, and evaluation contracts.

Teaching Assistant

University of Toledo

Jan 2019 – May 2019

Judith Herb College of Education

Department of Educational Foundations & Leadership

- RESM 6/8340: Qualitative Research II: Design & Analysis

Adjunct Assistant Professor

University of Toledo

Jan 2019 – May 2019

Judith Herb College of Education

Department of Educational Foundations & Leadership

- RESM 5/7210: Testing and Grading

Substitute Teacher

Sylvania School District

2015 – 2019

- Substitute teacher for Sylvania School District for 7th and 8th grade mathematics and science classes

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Graduate Assistant	Mathematics Education Jonathan Bostic, Ph. D. School of Teaching and Learning Bowling Green State University	2015 – 2016
	<ul style="list-style-type: none">Teaching assistant for middle school mathematics methods, introduction to secondary mathematics education, and introduction to middle school mathematics educationAssist in current mathematics education research for state awarded grants	

SCHOLARSHIP AND SERVICE

Journal Reviewer	Research Council on Mathematics Learning <i>Investigations in Mathematics Learning</i>	2016 – Present
Proceedings Reviewer	Research Council on Mathematics Learning Annual Conference	2016 – Present
Co-Chair & Sr. Rep.	AERA Division D Graduate Student Council	2019 – 2020
Co-Chair & Jr. Rep.	AERA Division D Graduate Student Council	2018 – 2019
Math Camp	Bowling Green State University	2015 – 2017
Undergraduate Researcher	ACTION Scholarship Program	2013 – 2015
Study Abroad	Bowling Green Council Teachers of Mathematics – Thailand	2013
Undergraduate Researcher	Northwest Ohio Center for STEM Education	2011 – 2012

PUBLICATIONS

Kruse, L., Gregory, S. E., Sondergeld, T. A., & Bostic, J. D. (under review). Validity and test-length reduction strategies for complex assessments. *Journal of Applied Measurement*.

Kruse, L. M., Sondergeld, T. A., Bostic, J., Waddell, E. A., Ibarrola Recalde, G. D., & Stone, G. (2020). Evaluating the impact of the common core for achievement middle grades mathematical proficiency program. *Pennsylvania Educational Leadership*, 39(2), 5-33.

Sondergeld, T., Stone, G., **Kruse, L.**, Bostic, J., & Matney, G. (under review). Evaluating the differential impact of dichotomous and partial credit scoring models on student problem-solving assessment outcomes. *School Science and Mathematics*.

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Kruse, L., Impellizeri, W., Witherel, C., & Sondergeld, T. (2020). Evaluating the impact of an assessment course on preservice teachers' classroom assessment literacy and self-efficacy. *Mid-Western Educational Research Association*, 32(2), 107-132.

Lavery, M. R., Bostic, J., **Kruse, L.**, Krupa, E., & Carney, M. (2020). Arguments surrounding argument-based validation: A systematic review of validation methodology. *Educational Measurement: Issues and Practice*.

Sondergeld, T., Stone, G., & **Kruse, L.** (2018). The importance of objective standard setting in educational assessment to inform decision making. *Educational Policy*.

Kruse, L., Schlosser, M., & Bostic, J. (2017). Shifting perspectives about the Standards for Mathematical Practice. *Ohio Journal of School Mathematics*, 77, 34-43.

Bostic, J., Sondergeld, T., **Kruse, L.**, & Folger, T. (2016). PSM7 and PSM8: Validating two problem-solving measures. *Journal of Applied Measurement*, 18(2), 151-162.

Bostic, J. & **Kruse, L.** (2016). A book review of mathematics in middle and secondary school: a problem solving approach. [Review of the book *Mathematics in middle and secondary school: A problem solving approach*, by A. Karp & N. Wasserman]. *Teachers College Record*.

Kruse, L. (2015). Student perspective and frequency of mathematical textbook use. *ScholarWorks BGSU*. Paper 207.

PRESENTATIONS

International

Kruse, L., Sondergeld, T. A., Impellizeri, W., & Witherel, C. (April, 2019). Evaluating the impact of an assessment course on preservice teachers' classroom assessment literacy and self-efficacy. Presented at the 2019 Annual Meeting of the American Educational Research Association. Toronto, CA.

Lavery, M., Carney, M., Bostic, J., Shih, J., Krupa, E., Wilson, M., & **Kruse, L.** (April, 2018). *Examining the Arguments Surrounding the Argument-Based Approach to Validation: A Systematic Review of Validation Methodology*. Proceedings of the 2018 Meeting of the American Educational Research Association: New York, NY.

Kruse, L. & Stone, G. E. (January, 2018). *Early Career Teacher Effectiveness and Retention: A Survey Research Study from an Alternative Teacher Education Program*. Proceedings of the 2018 Annual Meeting of the Hawaii International Conference on Education: Honolulu, HI.

Kruse, L., McCloskey, T., & McCarthy, D. (November, 2017). *Patients, preschoolers, and queer students: Forgetting and remembering human dignity in educational policies and practices*. Proceedings of the 2017 Annual Meeting of the American Educational Studies Association. Pittsburgh, PA.

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Sondergeld, T. A., Stone, G. E., & **Kruse, L.** (May, 2016). *Measuring achievement: Shifting the paradigm*. Proceedings of the 2016 Annual Meeting of the Athens Institute for Education and Research. Athens, Greece.

National

Kruse, L., Waddell, E.A., Ibarrola Recalde, G. D., Sondergeld, T. A., & Bostic, J. D. (April, 2020). Evaluating the impact of a multi-year mathematics proficiency program. Accepted to present at the 2020 Annual Meeting of the American Educational Research Association (cancelled). San Francisco, CA.

Sondergeld, T.A., Stone, G. E., **Kruse, L.**, Bostic, J. D., & Matney, G. (April, 2020) Evaluating dichotomous and partial-credit scoring within a constructed-response assessment: Is more information always psychometrically better? Accepted to present at the 2020 Annual Meeting of the American Educational Research Association (cancelled). San Francisco, CA.

Kruse, L. & Nicholson, T. (February, 2019). Evaluating response processes validity evidence for problem solving measures. Research Council on Mathematics Learning. Charlotte, NC.

Kruse, L., Schlosser, M. M., & Bostic, J. D. (February, 2016). Exploring preservice and inservice educators sensemaking of the standards for mathematical practice. Research Council on Mathematics Learning. Orlando, FL.

State

Bostic, J., **Kruse, L.**, & Nielsen, M. (March, 2017). *Middle and secondary mathematics teacher apprentices engaged in a field-centric preparation model*. Michigan Association of Mathematics Teacher Educators conference conversations among colleagues, East Lansing, MI.

Koestler, C., **Kruse, L.**, Schlosser, M. M., & Bostic, J. D. (March, 2016). Connecting the NCTM process standards and the CCSSM practices with prospective and practicing teachers. Michigan Association of Mathematics Teacher Educators. Kalamazoo, MI.

Matney, G., Walston, A., Bostic, J., **Kruse, L.**, Sullivan, C., Schlosser, M., Coder, H., Knapke, K., Nielsen, M., Gerges, R., Largent, K., & Lustgarten, A. (October, 2015). Mathematics camps activities: Pathways to student enjoyment of mathematics. Ohio Council Teachers of Mathematics Conference. Cincinnati, OH.

Coder, H., Matney, G., **Kruse, L.**, Sullivan, C., Schlosser, M., Haynes, E. (October, 2015). Mathematics camps activities: Pathways to student enjoyment of mathematics part 2. Ohio Council Teachers of Mathematics Conference. Cincinnati, OH.

Schlosser, M. M., **Kruse, L.**, & Bostic, J. D. (October, 2015). Examining instruction through action research and how you can too. Ohio Council Teachers of Mathematics Conference. Cincinnati, OH.

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Matney, G., Bostic, J., Matney, T., Haynes, E., **Kruse, L.**, Schlosser, M., & Sullivan, C. (October, 2014). Mathematics camps: Overcoming the stigma. Ohio Council Teachers of Mathematics Conference. Cleveland, OH.

Brahier, D., **Kruse, L.**, Poling, B., Dowe, M., High, S. (October, 2013). When are we ever going to use this? Ohio Council Teachers of Mathematics Conference. Dayton, OH.

Regional

Kruse, L. & Nielsen, M. E. (April, 2016). How to "Walk the walk" and "Talk the talk": Exploring Principles to Action's mathematics teaching practices – representations and mathematical discourse. Bowling Green Council Teachers of Mathematics. Bowling Green, OH.

Kruse, L. & Schlosser, M. M. (December, 2015). Unpacking the standards for mathematical practice: Professional development for inservice teachers. Bowling Green Council Teachers of Mathematics. Bowling Green, OH.

Schlosser, M. M. & **Kruse, L.** (November, 2015). Unpacking the standards for mathematical practice: Professional development for preservice teachers. Bowling Green Council Teachers of Mathematics. Bowling Green, OH.

TECHNICAL REPORTS

Sondergeld, T. A., & **Kruse, L.** (2020). Evaluation of the Indiana GEAR UP Program from 2016 to 2019, *Purdue University*, 1–53.

Kruse, L. (2018). Evaluation of Indoor Evaluation Quality Perceptions and Impact within Washington D.C. Public Schools, *Perkins Eastman, DC*, 1–26.

Sondergeld, T. A., & **Kruse, L.** (2017). Content alignment study: American Board Mathematics Standards compared to Common Core Mathematics Standards, *American Board for Certification of Teacher Excellence*, 1–17.

Sondergeld, T. A., & **Kruse, L.** (2017). Content alignment study: American Board PTK Standards compared to InTASC National Standards, *American Board for Certification of Teacher Excellence*, 1–17.

MEMBERSHIPS

The American Educational Research Association, Division D

2017 – Present

Research Council of Mathematics Learning

2015 – Present

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HONORS AND AWARDS

Certificate of Research Excellence from the Environmental Design Research Association	2019
AERA Division D GSC, Co-Chair & Senior Representative	2019 – 2020
Judith Herb College of Education Award	2018 – 2019
AERA Division D GSC, Co-Chair & Junior Representative	2018 – 2019
Robert R. Buell Memorial Achievement Award	2017 – 2018
The University of Toledo Alumni Affiliate Scholarship	2017 – 2018
Robert J. and Wrey Warner Barber Scholarship	2017 – 2019
Validity Evidence for Measurement in Mathematics Education (VMED) Conference Graduate Scholar Award	2017
Benjamin Drake Wright Scholar Program	2016 – 2019
BGSU President's Award, Summa Cum Laude	2015
Group Excellence in Service-Learning and Civic Engagement, Math Camp	2015