

Samantha S. Burg, PhD

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Experienced leader in large-scale assessment and psychometrics with over 25 years specializing in educational measurement, statistical analysis, and data-driven reporting. Recognized for managing complex national and international assessment programs and coordinating cross-functional teams through all phases of test development, validation, administration, and analysis. Adept at translating sophisticated data into actionable insights and effectively communicating results to all.

PROFESSIONAL EXPERIENCE

PSYCHOMETRICIAN/ STATISTICIAN/ RESEARCH

2010 – 2025

U.S. Department of Education National Center for Education Statistics - Assessment Division

Washington, DC

- **Directed technical processes for large-scale assessments**, including item development, psychometric reviews, test administration, and data collection for the National Assessment of Educational Progress (NAEP) and the Program for International Student Assessment (PISA).
- **Managed contracts and contractor teams** across the full assessment lifecycle, ensuring psychometric rigor, quality and compliance with international and federal standards.
- **Led development and publication of assessment reports and briefing materials**, directly advising the Secretary's Office and stakeholders on key findings and policy implications.
- **Coordinated and facilitated high-level data release activities**, translating complex data into accessible insights for policy and education leaders.

STATISTICS ADJUNCT PROFESSOR

2013 – 2023

George Washington University Elliot School of International Affairs

Washington, DC

- **Designed and taught graduate-level statistics coursework**, specializing in the use of SPSS for students from non-quantitative backgrounds.
- **Delivered instruction emphasizing statistical assumptions and validity**, teaching how to critically evaluate quantitative evidence and statistical methodologies.
- **Focused on applied statistics and practical understanding**, enabling students to ask intelligent questions about measurement validity, statistical inference, and research quality.

RESEARCH ASSOCIATE

2006 – 2010

MetaMetrics, Inc. Quantile® Framework for Mathematics

Durham, NC

- **Directed psychometric research and scale development**, overseeing validity, reliability, and linking studies for a mathematical developmental scale.
- **Led alignment studies and partnerships**, integrating measures with state assessments and commercial products.
- **Delivered presentations at national conferences** and conducted professional development workshops, translating complex psychometric concepts into accessible insights.
- **Managed and coordinated technical teams**, guiding research activities and ensuring quality standards throughout scale development.

EDUCATIONAL AND RESEARCH EVALUATION CONSULTANT

2000 – 2003

North Carolina State University Department of Urban Affairs

Raleigh, NC

- **Directed development of statewide assessments**, overseeing end-of-grade and end-of-year test construction across multiple grades and subjects. This included ensuring alignment of items with state standards and objectives.
- **Analyzed field-test data and parameters**, performing psychometric analyses for validity, reliability, and fairness.
- **Supervised content specialists and technical teams**, managing writing, design, and quality assurance.

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MATHEMATICS INSTRUCTOR

Glynn County Georgia Board of Education

1996 – 1998

Brunswick, GA

- **Instructor** high school mathematics
- **Developed and delivered professional training** in computer and instructional technology for educators, enhancing classroom integration of digital resources.
- **Served on district-level technology committees**, advising on educational technology adoption, curriculum integration, and digital media strategies.

ENGINEER

ARCO (Acquired by British Petroleum)

1990 – 1992

Anchorage, AK

- **Developed mathematical models** to track reservoir fluid dynamics (oil, water, gas) over time, ensuring precision, reliability, and operational accuracy.
- **Collaborated cross-functionally** with interdisciplinary teams to collect, validate, and analyze complex data sets, supporting strategic decision-making and model integrity.

EDUCATION

PhD, EDUCATIONAL MEASUREMENT | 2007

University of North Carolina, Chapel Hill, NC

MA, MATHEMATICS EDUCATION | 1996

University of Georgia, Athens, GA

BS, MECHANICAL ENGINEERING | 1989

University of Oklahoma, Norman, OK

SELECTED PUBLICATIONS

- Kastberg, D., Mamedova, S., & Burg, S.S. (2023). *Data from the Program for International Student Assessment Young Adult Follow-up Study (PISA YAFS): 2012–2016*. Journal of Open Psychology Data.
- Burg, S., Stephens, M., Malley, L., & Fonseca, F. (2022). *Synthesizing NAEP and International Large-Scale Assessment Score Trends: A Pattern of Diverging Performance*. Washington, DC: American Institutes for Research.
- Burg, S., Cramer, B., Malley, L., & Thompson, S. (2021, August). *The State of the (Education) Union: NAEP and International Score Trends*. Conference presentation at the 2021 NCES STATS-DC Data Conference, U.S. Department of Education, Washington, D.C. https://nces.ed.gov/whatsnew/conferences/statsdc/2021/session_4.asp
- Burg, S., & Thompson, S. (2021, August). *Preparing for Virtual Learning: What Data from International Assessments Reveal*. Virtual poster presented at the 2021 NCES STATS-DC Data Conference, U.S. Department of Education, Washington, D.C. <https://youtu.be/2bMiqmUP0IU>
- Burg, S. (2021, August). *PISA Results: Are Students Smart about Money?* Virtual poster presented at the 2021 NCES STATS-DC Data Conference, U.S. Department of Education, Washington, D.C. <https://youtu.be/zeS2Yo3FQc4>