CASSONDRA GRIGER

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EDUCATION

Educational Measurement and Statistics, Ph.D. | University of Iowa   2021 - Present

   ◇ *Dissertation: Confirming cognitive structures: A multi-group hierarchical factor analysis of clinical and normative samples in broad cognitive abilities*

   ◇ *Candidacy Thesis: Developing and validating an adaptive neurocognitive assessment to screen elementary-aged school children susceptible to adverse childhood experiences (ACEs)*

Educational Measurement and Statistics, M.A. | University of Iowa   2021 - 2023

School Psychology, Ph.D. (Transferred) | Duquesne University   2018 - 2020

Child Psychology, M.S.Ed. | Duquesne University   2016 - 2018

Psychology, B.S. | Mansfield University of Pennsylvania   2009 - 2013

GRANTS

Principal Investigator. *Developing and validating an adaptive neurocognitive assessment to screen elementary-aged school children susceptible to adverse childhood experiences (ACEs).* $24,790 Total Cost. American Psychological Association (APA) & American Psychological Foundation (APF) Elizabeth Munsterberg Koppitz Child Psychology Graduate Student Fellowship. Submitted and under review as of November 2023.

WORKSHOPS

Griger, C. & Copur-Gencturk, Y. (2023, June). *Natural Language Processing (NLP) Data Techniques with Symbolic and Nonsymbolic Mathematical Language.* Workshop presented at the Discovery Research PreK-12 PI Meeting, Arlington, VA. This data literacy session demonstrated a framework for preprocessing symbolic and non-symbolic text data using constructed responses from middle school preservice teachers.

INDUSTRY EXPERIENCE

Psychometric Extern | Cognia, Inc.   2024 - Present

   ◇ Extracting features of STEM strategy responses from technology enhanced items (TEIs) across grades 3-10 to evaluate scoring algorithm for accuracy and precision, in addition to exploring the validity of inferences in comparison to traditional selected-response items

Copy Editor | Innovative Assessment Solutions, LLC. (IAS)   2022 - Present

   ◇ Reviewed and edited over 1,000 K-12 technology enhanced items (TEI) in reading (ELA), mathematics, science, and social studies subject areas for field testing in state standardized tests

   ◇ Forecasted statistical and psychometric considerations for operational item performance concerning answer simplification, alternative solutions, and item dependency to minimize risk of turnover

Psychometrician / Statistician Consultant | Cassondra Griger, Sole Prop.   2021 - 2023

  ◇ National Science Foundation, Discovery Research K-12 (DRL-1813760; PI: Yasemin Copur-Gencturk, University of Southern California): *Usable Measures of Teacher Understanding: Exploring Diagnostic Classification Models and Topic Analysis as Tools for Assessing Proportional Reasoning for Teaching*

    ◇ Evaluated pre-service teacher's natural-language and knowledge patterns in proportional reasoning with statistical topic models (STMs) to validate a formative measure of professional development

    ◇ Optimized script automation with applied iterative coding, achieving an 83% reduction in analysis time per item from 60 to 7 minutes

    ◇ Mentored remote research assistants with video and written communication on data structures, data analysis (quantitative analysis and qualitative analysis), and statistical analysis

  ◇ Joan Herman and Richard Rasiej Mathematics Initiative (PI: Yasemin Copur-Gencturk, University of Southern California)

    ◇ Consulted collaborative work on identifying gender and racial bias in teacher's procedural and conceptual feedback to stimuli featuring diverse student's written work using LICW (Linguistic Inquiry and Word Count) dictionary with supervised and unsupervised latent Dirichlet allocation (LDA) models

RESEARCH EXPERIENCE

[i] University of Iowa; [d] Duquesne University; [c] Carnegie Mellon University

Research Assistant | Quantitative Methods Lab, Jonathan Templin, Ph.D.[i]   2021 - Present

  ◇ Evaluating algorithm efficacy of an item-level Computer Adaptive Test (CAT) with routing stage to decrease test time and increase precision in scoring

  ◇ Curating instructional material on growth modeling with multidimensional, school readiness data for educators and school practitioners

  ◇ Explored mixture modeling methods for designing an effective routing stage of a two-stage Multi-stage Test (MST) to establish classification accuracy based on controlled test constraints

Research Assistant | Neuropsychology Lab, Ara Schmitt, Ph.D.[d]   2018 - 2020

  ◇ Conducted systematic review for mapping pediatric chronic illness with neuropsychoeducational domains to identify performance differences and prevalence of empirical evidence

  ◇ Validated efficacy of text-to-speech and speech-to-text assistive technology software programs on 4th - 9th grade reading passages to inform treatment integrity of interventions

Research Assistantship | Sports Concussion Lab, Erica Beidler, Ph.D.[d]   2017 - 2020

  ◇ Managed research team in coordinating and collecting cross-sectional concussion survey data of matched participants to understand relationship of concussion knowledge across two generations

  ◇ Supervised undergraduates' analyses and interpretations of survey data to disseminate findings on PA school concussion care compliance and management protocols per Safety in Youth Sport Act

Lab Manager | Developmental Cognitive Lab, Robert S. Siegler, Ph.D.[c]   2016 - 2018

Research Associate | Developmental Cognitive Lab, Robert S. Siegler, Ph.D.[c]   2014 - 2016

  ◇ Maintained IRB protocols for Institute of Education Sciences (IES) funded experiments

  ◇ Collaborated with PI, post-doctoral fellows, and graduate students in assessment and coding scheme development to analyze students' conceptual and procedural strategy and errors on rational number arithmetic

  ◇ Recruited, established, and managed 7 public school district partnerships yielding 1700+ participants with abilities ranging from gifted students to students with learning disabilities

  ◇ Initiated partnership debriefing protocol in connecting results to classroom practice through consultation of instructional strategies for 4th-8th grade public school educators

  ◇ Established online consent initiative that increased participant recruitment response rate by 30%

Research Associate | Simon Initiative's LearnLab, Kenneth Koedinger, Ph.D.[c]   2013 - 2014

  ◇ Prepared and executed longitudinal intervention study of 371 students across 2 middle schools

  ◇ Investigated human-computer interactions via data mining techniques to discover learning patterns when using instructional scaffolding with cognitive tutors

Research Assistant | Relationships Lab, Brooke Feeney, Ph.D.[c]   2013

  ◇ Conducted conflict-induced and play-based experiments with ECG, Bioimpedance, and HRV measures to understand social support and coping mechanisms in dyadic relationships

Research Assistant | Health and Human Performance Lab, J. David Creswell, Ph.D.[c]   2013

  ◇ Collected salivary samples, behavioral measures, and cognitive performance indices to evaluate cortisol levels and subject's stress tolerance undergoing stress-induced, high-stake prompts

CLINICAL EXPERIENCE

Cognitive Assessment	WPPSI-4, WISC-5, WJ-IV COG, UNIT-2, SB-5
Neuropsychological Assessment	NEPSY, D-KEFS
Achievement Assessment	WJ-IV ACH, WIAT-4
Adaptive / Behavioral Rating Scales	BASC-3, Conners-3, Vineland-3, ABAS-3
Speech / Language Tests	WJ-IV OL, SOLOM
Social Scales	SSIS, SRS
Personality / Projective Tests	MMPI-2, Rorschach-PAS, Thematic Apperception, Figure Drawings, Sentence Completion

Advanced Doctoral Practicum | Hampton Township School District | 280 Hours   2020 - 2021

  ◇ Conducted full, clinical evaluations under supervision of a licensed School Psychologist and special education law guidelines to serve K-12 students

  ◇ Supervised two 2nd year practicum students' consultation and counseling cases and scaffolded case conceptualization to guide competency development

Integrated Practicum | Carlynton School District | 272.5 Hours   2019 - 2020

- ◇ Conducted full, clinical evaluations under supervision of a licensed School Psychologist and special education law guidelines to serve K-3 students

- ◇ Consulted with educators, special education professionals, and parents/guardians to implement interventions within the general classroom, special education settings, and home, respectively

Behavioral/Academic Intervention | Bethel Park School District | 43.75 Hours   2018 - 2019

- ◇ Evaluated K-5 students using functional behavioral assessment (FBA) and curriculum-based measurements (CBM) to support Response to Intervention (RtI) placement and services

- ◇ Conducted semi-structured clinical interviews and acquired case information from parents/guardians and teachers

- ◇ Provided academic interventions and counseling services to address case needs

PUBLICATIONS

Tian, J., Leib, E. R., **Griger, C.**, Oppenzato, C. O., & Siegler, R. S. (2022). Biased problem distributions in assignments parallel those in textbooks: Evidence from fraction and decimal arithmetic. *Journal of Numerical Cognition, 8*(1), 73-88. https://doi.org/10.5964/jnc.6365

Benno, M. T., **Griger, C.**, Tracy, B., Nayyar, A., Conaway, R. B., Franklin, K., & Schmitt, A. J. (2021). Mapping of pediatric chronic illness sequelae to inform evaluation planning. *Communiqué, 50*(2).

Beidler, E., Schmitt, A. J., Matta, M., & **Griger, C.** (2021). Diagnosed and nondisclosed sport-related concussion: An exploratory comparison study by ADHD status in collegiate athletes. *Journal of Attention Disorders, 26*(4). doi: 10.1177/10870547211015432

Matsuda, N., **Griger, C.**, Barbalios, N., Stylianides, G., Cohen, W. W., & Koedinger, K. R. (2014). Investigating the effect of meta-cognitive scaffolding for learning by teaching. In S. Trausen-Matu, K. Boyer, M. Crosby, & K. Panourgia (Eds.), *Proceedings of the International Conference on Intelligent Tutoring Systems* (pp. 104-113). Switzerland: Springer.

ACKNOWLEDGEMENTS

Methodological contributions to the following projects.

McMullen, J., Hannula-Sormunen, M. M., Lehtinen, E., Siegler, R. S. (2021). Predicting adaptive expertise with rational number arithmetic. *British Journal of Educational Psychology, 92*(2), 688-706. doi: 10.1111/bjep.12471

Braithwaite, D. W. & Siegler, R. S. (2020). Putting Fractions Together. *Journal of Educational Psychology, 113*(3), 556-571. doi: 10.1037/edu0000477

McMullen, J., & Siegler, R. (2020). Spontaneous focusing on multiplicative relations and fraction magnitude knowledge. *Mathematical Thinking and Learning,* 1-9. doi:10.1080/10986065.2020.1816284

Tian, J., Braithwaite, D. W., & Siegler, R. S. (2020). How do people choose among rational number notations? *Cognitive Psychology, 123*, 101333. https://doi.org/10.1016/j.cogpsych.2020.101333

Tian, J., Braithwaite, D. W., & Siegler, R. S. (2020). Distributions of textbook problems predict student learning: Data from decimal arithmetic. *Journal of Educational Psychology, 113*(3), 516-529. doi: 10.1037/edu0000618

CONFERENCE PRESENTATIONS

Griger, C., Bediwy, A., & Templin, J. (2024, April). Evaluating Algorithm Efficacy of an Item-Level Computer Adaptive Test with Routing Stage. Paper will be presented at the National Council on Measurement in Education, Philadelphia, PA.

Griger, C., & Templin, J. (2024, February). Replicability and Tutorial of School Readiness Profile and Growth Analyses. Paper will be presented at the National Association of School Psychologists, New Orleans, LA.

Bediwy, A., **Griger, C.**, & Templin, J. (2023, April). Identifying Methods for Multistage Testing (MST) Routing with Mixture Modeling. Paper presented at the National Council on Measurement in Education, Chicago, IL.

Nayyar, A., Conaway, B., Benno, M., **Griger, C.**, Tracy, B., & Schmitt, A. (2021, February). *Evaluation planning for pediatric chronic illnesses through neuro-psychoeducational sequelae mapping.* Poster presented at the National Association of School Psychologists, Virtual.

Benno, M., **Griger, C.**, Tracy., B., Schmitt, A.J., & McCallum, E. (2019, August). *Accuracy of text-to-speech and speech-to-text assistive technology.* Poster presented at the American Psychological Association Annual Convention, Chicago, IL.

Griger, C., Schmitt, A. & Beidler, E. (2019, March). *Predictors of unreported sport-related concussions among youth athletes.* Poster presented at the Graduate Student Research Symposium, Duquesne University, Pittsburgh, PA.

Beidler, E., McAllister-Deitrick, J., Wallace, J., Anderson, M., Schmitt, A., & **Griger, C.** (2018, May). *Predictors of sport-related concussion nondisclosure in collegiate student-athletes.* Poster presented at the 6th Annual Concussion Symposium of Sports Neuropsychology Society, Washington, DC.

Griger, C., Beidler, E., Schmitt, A., & McAllister-Deitrick, J. (2018, May). *Concussion diagnosis and under-reporting behavior of ADHD collegiate student-athletes.* Poster presented at the 6th Annual Concussion Symposium of Sports Neuropsychology Society, Washington, DC.

Griger, C., Williams, K., Beidler, E., & Schmitt, A. (2018, March). *Concussion diagnosis and reporting behavior of collegiate student-athletes.* Poster presented at the Graduate Student Research Symposium, Duquesne University, Pittsburgh, PA.

Mostow, J., Weinberg, G., & **Griger, C.** (2014, July). *What's the difference? Linguistic model comparison using bayesian knowledge tracing.* Poster presented at Simon Initiative's LearnLab Summer School: Educational Data Mining, Carnegie Mellon University, Pittsburgh, PA.

Matsuda, N., **Griger, C.**, Barbalios, N., Stylianides, G., Cohen, W. W., & Koedinger, K. R. (2014, June). *Investigating the effect of meta-cognitive scaffolding for learning by teaching.* Poster presented at the 12th International Conference on Intelligent Tutoring Systems, Honolulu, HI.

ENTREPRENEURIAL EXPERIENCE

Founder | AssessmentQuo, LLC.   2023 - Present

◇ Navigating technology transfer to facilitate public use of computerized measure to screen and identify children enduring adverse experiences and trauma

◇ Lead a small team in the development of comprehensive assessment database for educational stakeholder's use in early detection of learning disabilities and cognitive adversities in learners

◇ Advise in application of analytic tools to assist in personalized instruction and skill-building

◇ Secure incubator and small business funding to support talent acquisition and business expenses for developer needs in technology, security, and data

Founder | CassWoodCustoms, Sole Prop.   2018 - 2021

◇ Served the local Pittsburgh music community in building custom studio desks and speaker boxes with wood materials, CNC mill machinery, laser cutter, and power tools at HackPGH makerspace

◇ Developed and led 6-hour experiential sessions where students practice power tool safety and crafted their own cutting board out of live edge lumber

TEACHING EXPERIENCE

Teaching Assistant | Factor Analysis & Structural Equation Models, Lesa Hoffman, Ph.D. [i] 2024 Spring

◇ Support graduate students' development in latent variable modeling using R and MPLUS

Teaching Assistant | Clustered Multilevel Models, Lesa Hoffman, Ph.D. [i]   2023 Fall

◇ Supported graduate students' development in multilevel modeling using R, SAS, and Stata

Instructor | Psychological Testing, Ara Schmitt, Ph.D. [d]   2019 & 2020 Spring

◇ Delivered direct instruction to graduate-level counseling students with a focus on standardized tests, cognitive and achievement assessments, and personality and interest inventories

◇ Addressed principles of test theory and development, psychometric methodologies, and measurement interpretation using applications of clinical research and health services research

Academic Tutor | Law Clinic, Tammy Hughes, Ph.D. [d]   2020 Fall

◇ Contracted to provide academic interventions for a 3rd grade student involved in a social justice case law with a neighboring school district

ATTENDED CONFERENCES & WORKSHOPS

2023   National Council on Measurement in Education (NCME)
           Addressing the Data Challenges of Next-generation Assessments:
           Data Science Upskilling for Psychometricians
           Applying Data Mining Methods to Detect Test Fraud
2022   American Educational Research Association (AERA)
2022   National Council on Measurement in Education (NCME)
2020   Association of School Psychologists of Pennsylvania (ASPP)
2019   American Psychological Association (APA) Convention
2019   Duquesne University Graduate Student Research Symposium
2018   Annual Concussion Symposium of Sports Neuropsychology Society
2018   Duquesne University Graduate Student Research Symposium
2016   BrainHub's Neurons to Neighborhoods Community Outreach Event
2015   Multimodal Neuroimaging Training Program (MNTP) &
           Center for the Neural Basis of Cognition (CNBC), Health Neuroscience Symposium
2014   Simon Initiative's LearnLab Summer School, Educational Data Mining

PROFESSIONAL ORGANIZATION AFFILIATIONS

2021 - Present	National Council on Measurement in Education (NCME)
	American Educational Research Association (AERA)
	Cognition and Assessment Special Interest Group #167
2018 - Present	National Association of School Psychologists (NASP)
2018 - 2020	Student Association of School Psychologists (SASP)

SERVICE

2023	*Chair* | Graduate Measurement & Statistics Student (GMASS)[i]
2022	*Co-Founder* | E.F. Lindquist Chapter of AERA[i]
	Co-Editor | Educational Measurement and Statistics Handbook[i]
	Social Chair | Graduate Measurement & Statistics Student (GMASS)[i]
2019	*Volunteer Chair* | Student Affiliates in School Psychology (SASP)[d]
2018	*Co-Curator* | Conference on Rational Numbers[c]
2017	*Co-Curator* | K-8 In-Service Professional Development, Bethel Park School District[c]
2016	*Discussion Facilitator* | BrainHub's Neurons to Neighborhoods Community Outreach Event[c]

AWARDS

2024	Blommers-Hieronymus-Feldt Fellowship ($2,000)[i]
	NSF NIER Graduate Student Workshop ($250)[i]
2023	OVPR Limited Submission (University Representative)[i]
	Fellowship Incentive Program (FIP)($250)[i]
	Office of the Dean Graduate Student Travel Award ($300)[i]
	Audrey Qualls Travel Award ($300)[i]
2022	AERA Cognition and Assessment SIG Conference Scholarship (Registration Covered)

TECHNICAL STRENGTHS

Computer Languages	R, SAS, Stata, Python
Analysis Software	R, MPlus, Excel, SPSS
Psychometric Development	Qualtrics, TAO, ExamSpark
Mathematics Tools	Desmos, GeoGebra, Wolfram Mathematica
Collaboration	Discord, Slack, Trello
Authoring Tools	LaTeX, Rmarkdown, Overleaf, Quarto
Productivity	Notion, Git, OneDrive, GoogleDrive, Dropbox
Cloud Services	Oracle