

**Christopher H. Rhoads**  
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Dept. of Educational Psychology  
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## EDUCATION

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**Northwestern University**, Evanston, IL

Ph.D. in Statistics, 2008.

**State University of New York at Stony Brook**, Stony Brook, NY

M.S. in Applied Mathematics and Statistics, 2003.

**Haverford College**, Haverford, PA

B.A. in Philosophy, 1996.

## PROFESSIONAL EXPERIENCE

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**University of Connecticut**, Storrs, CT

*Associate Professor of Educational Psychology.* August 2017-Present.

*Program Coordinator*, Research Methods, Measurement and Evaluation Program. August 2018-Present.

*Affiliated Faculty*, Center for Education Policy Analysis, Research and Evaluation.

*Affiliated Faculty*, Center for Applied Research in Human Development.

*Affiliated Faculty*, Biostatistics and Methodology Core, UConn Institute for Collaboration on Health, Intervention and Policy (InCHIP).

*Statistician*, UConn Evidence Based Practice Center (for the Agency for Health Care Research and Quality)

*Assistant Professor of Educational Psychology.* August 2011-August 2017.

**Northwestern University**, Evanston, IL

*Institute of Education Sciences Post-Doctoral Fellow*, June 2008-August 2011.

## PROFILE

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Dr. Christopher Rhoads received his Ph.D. in Statistics from Northwestern University (NU) and is currently an Associate Professor in the Department of Educational Psychology in the Neag School of Education at the University of Connecticut, where he teaches classes in research design and quantitative methods. He entered his current position following a three-year post-doctoral fellowship at the Institute for Policy Research at NU. Dr. Rhoads' research focuses on methodological and statistical approaches to improving causal inference in policy-relevant research, particularly in the design and analysis of large field studies for the purposes of policy evaluation. He has published articles in outlets such as *Journal of Educational and Behavioral Statistics*, *Journal of Research on Educational Effectiveness* and *British Journal of Mathematical and Statistical Psychology* and is acknowledged as an outstanding peer reviewer for two scholarly journals.

Dr. Rhoads has been a member of research teams conducting evaluation and efficacy grants in the areas of educational technology (Institute for Education Sciences Goal 3) and housing and child welfare (Administration for Children and Families) and serves on the advisory boards for several IES and NSF funded projects. He has been co-I or co-PI for numerous grants funded by IES, NSF and HHS. He is also a regular presenter at the IES funded Summer Research Training Institute for Cluster Randomized Trials, where he lectures on the topic of longitudinal models. He is an active consultant on research design and methodological issues to research teams in the areas of both education and the social services.

## RESEARCH INTERESTS

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Hierarchical/multi-level modeling; Design of field experiments in education research; Non-experimental designs for causal inference; Statistical power and optimal experimental design.

## FELLOWSHIPS AND AWARDS

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Outstanding Reviewer Award, Journal of Educational and Behavioral Statistics (2015, 2017, 2018, 2021)  
Outstanding Reviewer Award, Educational Administration Quarterly (2014)  
Institute for Policy Research Graduate Fellow, Northwestern University (2006-2008)  
Northwestern University Graduate Fellowship (2002-2004)  
VIGRE Fellowship (2001-2003)

## Journal Articles (peer reviewed)

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Forzani, E., Leu, D., Li, Y., **Rhoads, C.**, Guthrie, J. and McCoach, D.B. (2021). Characteristics and Validity of an Instrument for Assessing Motivations for Online Reading to Learn. *Reading Research Quarterly*, 56(4), 761-780.

Li, Y. and **Rhoads, C.** (2020). Applying Inverse Propensity of Participation Weights to Multilevel Models for the Purpose of Generalizing Large-Scale Cluster Randomized Trials in Education. *Testing, Psychometrics, Methodology in Applied Psychology*, 27(3), 453-476.

Lombardi, A., Riftenbark, G., Monahan, J., Tarconish, E. and **Rhoads, C.** (2020). Aided by extant data: The effect of peer mentoring on achievement for college students with disabilities. *Journal of Postsecondary Education and Disability*, 33, 143-154.

Upshur, C., Wenz-Gross, M., **Rhoads, C.**, Heyman, M., Yoo, Y. and Sawosik, G. (2019). A randomized efficacy trial of the Second Step Early Learning (SSEL) curriculum. *Journal of Applied Developmental Psychology*, 62, 145-159.

Lawless, K.A. Brown, S.W., **Rhoads, C.**, Lynn, L., Newton, S.D., (2018). Promoting students' science literacy skills through a simulation of international negotiations: The Global Ed 2 project. *Computers in Human Behavior*, 78, 389-396.

**Rhoads, C.** (2017). Coherent power analysis in multi-level studies using parameters from surveys. *Journal of Educational and Behavioral Statistics*, 42(2), 166-194.

**Rhoads, C.** (2016). The Implications of Contamination for Educational Experiments with Two Levels of Nesting. *Journal of Research on Educational Effectiveness*, 9(4), 531-555.

Louie, J., **Rhoads, C.**, and Mark, J. (2016). Challenges when using the Regression Discontinuity Design in educational evaluations: Lessons from the Transition to Algebra study. *American Journal of Evaluation*, 37(3), 381-407.

Kennedy, C., **Rhoads, C.** and Leu, D. (2016). The new literacies of online research and comprehension: A Performance Based Assessment using One-to-One Laptops in Two States. *Computers and Education*, 100, 141-161.

**Rhoads, C.** and Dye, C. (2016). Optimal Design for Two Level Random Assignment and Regression Discontinuity Studies. *Journal of Experimental Education*, 84(3), 421-448.

Leu, D., Forzani, E., **Rhoads, C.**, Maykel, C., Kennedy, C. and Timbrell, N. (2015). The new literacies of online research and comprehension: Rethinking the reading achievement gap. *Reading Research Quarterly* 50(1), 1-23. Newark, DE:

**Rhoads, C.** (2014). Under what circumstances does external knowledge about the correlation structure improve power in cluster randomized designs? *Journal of Research on Educational Effectiveness*, 7(2), 205-224.

Wolff, E., Isecke, H., **Rhoads, C.** and Madura, J. (2013). Nonfiction reading comprehension in Middle School: Exploring an interactive software approach. *Educational Research Quarterly*, 37(1).

**Rhoads, C.** (2012) Problems with Tests of the Missingness Mechanism in Quantitative Policy Studies. *Statistics, Politics and Policy*, 3(1), Article 6.

Rhoads, S. and **Rhoads, C.** (2012) Gender roles and infant/toddler care: Male and female professors on the tenure track. *Journal of Social, Evolutionary, and Cultural Psychology*, 6(1), 13-31.

**Rhoads, C.** (2011) The Implications of Contamination for Experimental Design in Education Research. *Journal of Educational and Behavioral Statistics*, 36(1), 76-104.

Hedges, L.V. and **Rhoads, C.** (2011) Correcting an Analysis of Variance for Clustering. *British Journal of Mathematical and Statistical Psychology*, 64(1), 20-37.

Mosnaim, G.H., Cohen, M., **Rhoads, C.**, Rittner, S.S. & Powell, L. (2008). Use of MP3 Players to Increase Asthma Knowledge in Inner-City African-American Adolescents. *International Journal of Behavioral Medicine*, 15, 341-346.

### Technical Reports (peer reviewed)

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Stewart, J., **Rhoads, C.**, Serdiouk M., Van Dine, D., Cherasaro, T., & Klute, M. (2019). *Associations between the qualifications of middle school Algebra I teachers and student math achievement* (REL 2020-005). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

Hedges, Larry and **Rhoads, Christopher** (2009). *Statistical Power Analysis in Education Research* (NCSE 2010-3006). Washington, DC: National Center for Special Education Research, Institute of Education Sciences, U.S. Department of Education.

### UNDER REVIEW AND IN PREPARATION

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Lewis, C., Chavez, V., Schoen, R. and **Rhoads, C.** (submitted). Instructional Quality Assessment (IQA): A review and new findings.

Schoen, R., Lewis, C., Lai, K. and **Rhoads, C.** (submitted). Impact of Lesson Study and Fractions Resources on Third and Fourth Grade Classroom Instruction and Student Learning in Fractions.

Schoen, R., **Rhoads, C.**, Perez, A., Tazaz and Secada, W. (submitted). Impact of Cognitively Guided Instruction on elementary school math achievement: Five years after the initial opportunity.

Schoen, R., Bray, W., **Rhoads, C.** and Oshiro, B. (in preparation). Effects of a professional development program on teacher beliefs about mathematics teaching and learning after one and two years of an experimental study.

**Rhoads, C.** and Montrosse-Moorhead, B. (submitted). Implementation fidelity: The disconnect between theory and practice.

Montrosse-Moorhead, B., Juskiewicz, K., Li, Y., **Rhoads, C.** and Gambino, A. (in preparation). Does the walk match the talk? A systematic review of implementation fidelity

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## BOOK REVIEWS

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**Rhoads, C.** (2017). Review of “Power Analysis of Trials with Multilevel Data”. *The American Statistician*, 70:4, 427-429.

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## BOOK CHAPTERS

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Hedges, L. V. & **Rhoads, C.** (2010). Statistical Power Analysis. In McGaw, B., Baker, E. & Peterson, P. (Eds.), *International Encyclopedia of Education*. Oxford: Elsevier.

**Rhoads, C.** and Li, Y. (2022). Causal Inference in Multi-level Settings. In O’Connell, A., McCoach D.B. & Bell, B.A. (Eds.) *Multilevel Modeling Methods with Introductory and Advanced Applications*.

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## WHITE PAPERS

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Klute, M., Yanoski, D., **Rhoads, C.**, Norford, J., Joyce, J., & Serdiouk, M. (2019). *Improving student learning and engagement through gamified instruction: Evaluation of iPersonalize*. Centennial, CO: Marzano Research.

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## WORKING PAPERS (published)

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**Rhoads, C.** (2009). A Comment on “Tests of Certain Types of Ignorable Non-Response in Surveys Subject to Item Non-Response or Attrition.” Northwestern University, Institute for Policy Research Working Paper WP-09-10.

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## INVITED TALKS

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2021 *Research Design for Educational Effectiveness Studies: Statistical and Practical Considerations*. Keynote for LEAD Network (Tubingen, Germany) Virtual Retreat (Online).

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## CONFERENCE PRESENTATIONS (abridged/recent)

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Schoeneberger, J. and **Rhoads, C.** (2022). *Operationalizing a Regression Discontinuity Design Across Cohorts and Sites for Struggling Readers*. Paper for 2022 American Evaluation Association Annual Conference.

Ran, H., Secada, W., **Rhoads, C.**, Schoen, R., Tazaz, A. and Liu, X. (2022). *The long-term effects of Cognitively Guided Instruction on Elementary Students’ Mathematics Achievement*. Paper for 2022 AERA Annual Meeting.

Schoen, R., **Rhoads, C.**, Tazaz, A., Secada, W. and Stone, A. (2021). *Impact of Cognitively Guided Instruction on Elementary School Math Achievement: Five years after the Initial Opportunity*. Paper for 2021 SREE Annual Meeting.

Li, Yujia and **Rhoads, C.** (2020). *Evaluating Methods for Handling Multilevel Selection for the Purpose of Generalizing Cluster Randomized Trials*. Paper for 2020 SREE annual meeting (cancelled).

C.H. Rhoads

Long, D., McCoach, B. and **Rhoads, C.** (2020). *Examining the Effects of Gifted Classes on Mathematics and Reading/Language Arts Achievement*. Paper for 2020 SREE annual meeting (cancelled).

Gambino, A. and **Rhoads, C.** (2019). *Evaluating the Performance of Continuous Analysis of Symmetrically Predicted Endogenous Subgroups via a Monte Carlo Simulation Study*. Paper for 2019 AEA annual meeting.

Alexandro, D., Martie, C., **Rhoads, C.**, Loken, E., Wilson, S. and Swaminathan, H. (2019). *Evaluating Statistical and Machine Learning Methods to Improve Early Warning Systems*. Paper presented at the 2019 NCME annual meeting.

Gambino, A., **Rhoads, C.**, Upshur, C. and Wenz-Gross, M. (2019). *Evaluating Implementation Fidelity's Role in the Kidsteps II Intervention Study via Multilevel Mixture Mediation Modeling*. Poster presented at the 2019 SREE annual meeting.

Li, Y., **Rhoads, C.** and Schoen, R. (2019). *Understanding the Within School Selection Process for the Purpose of Generalizing from RCTs – A Case Study*. Paper presented at the 2019 SREE annual meeting.

Brown, SW., Lawless, K.A., **Rhoads, C.**, Newton, S.D., & Lynn, L. & Song, S. (August, 2017). *Promoting students' STEM literacy skills through a PBL online simulation*. Presented at the EARLI 2017 Conference; University of Tampere, Tampere, Finland.

#### **STATISTICAL CONSULTING and TECHNICAL ADVISING (selected)**

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**Chapin Hall.** Chicago, IL

*Consultant*, 2021-Present.

Advise on statistical issues pertaining to evaluation of cash transfer program for homeless youth.

**ICF.** Calverton, MD.

*Consultant*, 2018-Present.

Advise on design and analysis issues for large regression discontinuity study.

**Marzano Research/ Regional Education Lab Central (REL-Central).** Centennial, CO.

*Technical Working Group*, 2017-Present.

Part of technical working group tasked with reviewing research projects proposed to REL and ensuring methodological quality of ongoing projects.

**University of Massachusetts Medical Center.** Worcester, MA.

*Consultant*, 2016-2019.

Advise research team of IES Efficacy Study of a pre-K social and emotional learning curriculum.

**Florida State University.** Tallahassee, FL.

*Consultant*, 2017-2020.

Advise research team regarding design and analysis issues for multiple studies of the Cognitively Guided Instruction professional development initiative.

**Mills College.** Oakland, CA.

*Technical Working Group*, 2016-2021.

Advise re. design and analysis issue for IES Efficacy study of fractions instruction

**Education Development Corporation.** Waltham, MA.

*Technical Advisor*, 2013-2015, 2017-2019.

Advised on multiple studies exploring the impact of the Transition to Algebra Curriculum.

**American Institutes for Research**. Washington, D.C.

*Technical Working Group*, 2013-2015.

Technical working group for IES funded study of a math professional development program.

**ICF International/ Mid-Atlantic Regional Education Lab (REL)**. Calverton, MD.

*Technical Working Group*, 2012-2016.

Part of technical working group tasked with reviewing all research projects proposed to REL and ensuring methodological quality of ongoing projects.

**Mid-continent Research for Education and Learning**. Denver, CO.

*Statistical Consultant*, 2009-2017, 2020-present.

Advised on multiple projects related to foundation, state and IES grants under the Exploration, Development and Efficacy Goals. Projects have included a cluster randomized trial of a robust vocabulary instruction program, a cluster randomized trial of a middle school Algebra readiness curriculum, an exploration study of the effects of Expeditionary Learning using propensity score matching and a development project about mathematics formative assessment. Advise on design of regression discontinuity studies.

## WORKSHOPS

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**IES Summer Research Training Institute: Cluster Randomized Trials**,

Evanston, IL and Nashville, TN; Summer 2007-Summer 2016, Summer 2018, 2019, 2022.

*Teaching Assistant, Instructor, Group facilitator*. The goal of this 11 day training institute is to increase the national capacity of researchers to develop and conduct rigorous evaluations of the impact of education interventions. Participants receive instruction in all aspects of the grant preparation process as well instruction in design and analysis issues that arise in the context of large scale field experiments in education. Participants also break into small groups to develop sample IES grant proposals.

**Research Design in Education Research**

**(IES funded workshop for faculty from minority serving institutions)**. Evanston, IL, July, 2014.

*Instructor*. Prepared lectures on basics of causal inference, experimental design, power analysis.

**Randomized Controlled Trials in Education**. University of Virginia, May, 2010.

*Developer and Instructor*. Developed two-day workshop describing the fundamentals of the design and analysis of randomized experiments in education for graduate students and post-doctoral fellows at Curry School of Education. Prepared syllabus, delivered lectures, invited guest speakers, etc.

**Introduction to Evaluation Research Design**, Washington D.C., SREE fall meetings 2011.

*Instructor*. Two-day workshop introducing principles of research design and the Campbell validity framework.

**Equitable Mathematics Classrooms Observation Tools conference**. Pittsburgh, PA, March, 2017

*Invited Participant*. One of 25 invited participants to this Spencer Foundation funded conference. EMCOT brought together scholars from different disciplines to work to identify and design measures for investigating practices that support equity and access to high-quality mathematics instruction specifically for low-performing African American students and English Language Learners.

## GRANTS FUNDED

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### Internal

2012-2013 Principal Investigator. *Optimal Design for Regression Discontinuity Studies in Educational Evaluation*, UConn Faculty Large Grant Competition. (\$22,509).

2019-2021 Co-Principal Investigator. *Investigating the Relationship between Organizational*

*Conditions and Effective Technology in Schools*, Neag School Dean's Research Incentive Award (\$9,960).

External

- 2012-2015 Co-Principal Investigator. *Project PAPER: Preparing Academics in Psychometrics and Educational Research*, U.S. Department of Education GAANN competition (PI- Betsy McCoach, \$399,000).
- 2013 Principal Investigator. *Evaluation of Readorium Rising Reader: Smart non-fiction Reading Comprehension Software for Students in Grades 3-5*, Institute of Education Sciences, SBIR competition (\$150,000; UConn budget: \$7,400)
- 2012-2018 Co-Investigator: Evaluation Methodology and Statistics. *Grant to study, develop and disseminate a model of Intensive Supportive Housing for Families*. Children's Bureau, Administration for Children, Youth and Families (ACF), U.S. Department of Health and Human Services (\$5 million to CT Dept of Children and Families, \$1.1 million to UConn PI: Anne Farrell).
- 2013-2017 Key Personnel. *Developing STEM Workforce Skills and Dispositions through the GlobalEd 2 Project*. Institute of Education Science, Educational Technology competition (\$3.5 million, PI: Scott Brown)
- 2014-2020 Co-Principal Investigator. *National Center for Research on Gifted Education*. U.S. Dept. of Education. (\$5 million, PI: Del Siegle).
- 2016-2018 Principal Investigator. *Evaluation of the MathBrainius software*. National Science Foundation (\$730,000; UConn budget \$68,083).
- 2017-2020 Principal Investigator. *Factors Affecting Comprehension by Teens During Online Reading in Science*. Institute of Education Sciences (\$599,852).
- 2017-2022 Co-Investigator. *Project LIFT: Learning Informs Focused Teaching*. U.S. Dept. of Education, Jacob Javits Gifted and Talented Program (\$2.41 million, PI: Catherine Little).
- 2019-2024 Co-Principal Investigator (UConn PI). *What happens when students can't get into an online STEM course section? Online STEM course scarcity, student time poverty, and academic momentum*. NSF (\$2.5 million, PI: Claire Wladis).
- 2020-2025 Co-Principal Investigator. *National Center for Research on Gifted Education*. Institute for Education Sciences. (\$5 million, PI: Del Siegle).
- 2018-2022 Co-Principal Investigator. (UConn PI). *Foundations for Success: Developing Effective Mathematics Educators through Cognitively Guided Instruction*. U.S. DOE-SEED program. (\$9.7 million, PI: Rob Schoen)
- 2021-2025 Co-Investigator. *Fostering Computational Thinking through Neural Engineering Activities in High School Biology Classes*. NSF (\$1.5 million, PI: Ido Davidesco).

**COURSES TAUGHT**

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**University of Connecticut**, Storrs, CT.

- EPSY 5605 Quantitative Methods in Educational Research I
- EPSY 5607 Quantitative Methods in Educational Research II
- EPSY 6601 Methods and Techniques of Educational Research

EPSY 6655 Advanced Causal Inference with Data  
EPSY 5601 Principles and Methods of Educational Research  
EPSY 6651 Introduction to Methods for Causal Inference using Educational Data

**Stony Brook University** Stony Brook, NY.  
AMS 110 Probability and Statistics in the Life Sciences

## PROFESSIONAL SERVICE

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### Journal Reviewing

*Editorial Board*, Journal of Educational and Behavioral Statistics (2015-Present).  
*Editorial Board*, Journal of Research on Educational Effectiveness (2015-Present).  
*Editorial Board*, Gifted Child Quarterly (2015-2017).  
  
*Reviewer*, Journal of Research on Educational Effectiveness (2009-10, 2012-15).  
*Reviewer*, Journal of Educational and Behavioral Statistics (2010, 2012, 2014-2015).  
*Reviewer*, Journal of Educational Psychology (2010-2013).  
*Reviewer*, British Journal of Mathematical and Statistical Psychology (2012-2013, 2016).  
*Reviewer*, Psychological Methods (2011-2014).  
*Reviewer*, Journal of the American Statistical Association (2011-2012).  
*Reviewer*, Developmental Psychology (2011).  
*Reviewer*, Journal of the Royal Statistical Society (2012).  
*Reviewer*, Gifted Child Quarterly (2012, 2014-17).  
*Reviewer*, Evaluation Review (2013-2016, 2018).  
*Reviewer*, Educational Administration Quarterly (2014-15).  
*Reviewer*, Prevention Science (2014).  
*Reviewer*, American Journal of Evaluation (2015, 2017, 2021, 2022).  
*Reviewer*, Psychological Bulletin (2015, 2018).  
*Reviewer*, Educational Evaluation and Policy Analysis (2016, 2018-19).  
*Reviewer*, Journal of Experimental Education (2016-20).  
*Reviewer*, American Educational Research Journal (2017).  
*Reviewer*, Statistical Methods in Medical Research (2017).  
*Reviewer*, Statistics in Medicine (2020).

### Conference reviewing

*Reviewer*, Society for Research on Educational Effectiveness annual meeting, 2009-2015, 2017, 2019-22.

### Grant Reviewing

*Member*. NSF Panel (2013). Innovative Technology Experiences for Students and Teachers (ITEST)—scale-up competition.  
*Member*. IES Panel (2019). Low-Cost, Short Duration Evaluations of Education and Special Education Interventions – Reading, Writing, Language and Development.  
*Ad hoc reviewer*. NSF (2022)