

**Kyle Cox, Ph.D.**  
University of North Carolina at Charlotte  
266 Cato College of Education | Department of Educational Leadership  
9201 University City Boulevard | Charlotte, NC 28223  
(704) 687-8867  
*kyle.cox@uncc.edu*

## **EDUCATION**

*Ph.D.*    2019    *University of Cincinnati*                      *Educational Studies: Quantitative Research Methods*

*M.A.*    2012    *University of Cincinnati*                      *Educational Studies: Quantitative Research Methods*  
*Graduate Certificate*    *Assessment and Evaluation*

*B.S.*    2005    *Miami University*                                      *Middle Childhood Education*

## **PROFESSIONAL EXPERIENCE**

2019-Present    Assistant Professor of Educational Research, Measurement, and Evaluation  
University of North Carolina at Charlotte

2015-2019    National Science Foundation Research Assistant  
University of Cincinnati

2015-2019    Teaching Assistant  
University of Cincinnati

2018-2019    Adjunct Instructor  
University of Cincinnati

2007-2015    6<sup>th</sup> Grade Mathematics Teacher  
Mason City School District

## **TEACHING/CURRICULUM DEVELOPMENT**

### **Courses Taught**

*University of North Carolina at Charlotte (2019-Present)*  
RSCH 8150/7150: Structural Equation Modelling  
RSCH 8120/6120: Advanced Statistics  
RSCH 6101: Research Methods

*University of Cincinnati (2018-2019)*  
EDST 7007: Introduction to *R*

*University of Cincinnati (2015)*  
EDST 8034: Measurement and Assessment

### **Teaching Assistant**

*University of Cincinnati (2015-2019)*

EDST 8089: Structural Equation Modeling  
EDST 7017: Data Manipulation in R  
EDST 7019: Data Visualization in R  
EDST 8088: Item Response Theory  
EDST 8086: Quasi- & Experimental Research Design for Causal Inference  
EDST 7011: Statistical Data Analysis II  
EDST 7010: Statistical Data Analysis I

## Advising/Mentorship

### *Doctoral Dissertation Committees*

Hancock, C., Curriculum and Instruction  
Rochester, T., Urban Education  
Hujar, J., Educational Leadership-ERME  
Wang, Y., Educational Leadership-ERME

### *PhD Advisees*

Hujar, J., Educational Leadership-ERME  
Deiderich, J., Educational Leadership-ERME

## RESEARCH

### Publications (\* indicates student collaboration)

#### *Journal Articles*

- Cox, K., & Kelcey, B. (in press). Statistical power for detecting moderation in partially nested designs. *American Journal of Evaluation*.
- Cox, K., & Kelcey, B. (2021). Croon's bias corrected estimation of latent interactions. *Structural Equation Modeling: A Multidisciplinary Journal*, 28, 863-874.
- Kelcey, B., Cox, K., & Dong, N. (2021). Croon's bias-corrected factor score path analysis for small- to moderate-sample multilevel structural equation models. *Organizational Research Methods*, 24, 55-77.
- Kelcey, B., Bai, F., Xie, Y., & Cox, K. (2020). Micro-macro and macro-micro effect estimation in small scale latent variable models with Croon's method. *Testing, Psychometrics, Methodology in Applied Psychology*, 27, 477-499.
- Toraman, S., Cox, K., Plano Clark, V. L., & Dariotis, J. K. (2020). Graduate students' current practices for writing a mixed methods research study abstract: An examination of doctoral dissertation and master's thesis abstracts in the ProQuest Dissertations and Theses Global™ database. *International Journal of Multiple Research Approaches*, 12, 110-128.
- Cox, K., & Kelcey, B. (2019). Optimal design of cluster- and multisite-randomized studies using fallible outcome measures. *Evaluation Review*, 43, 189-225/ <https://doi.org/10.1177/0193841X19870878>
- Cox, K., & Kelcey, B. (2019). Effects of misspecified parameter values in optimal sample allocation on the statistical power of group-randomized studies of mediation. *Methodology*, 15, 106-118.

**Cox, K.**, & Kelcey, B. (2019). Optimal sample allocation in group-randomized mediation studies with a group-level mediator. *The Journal of Experimental Education*, 87, 661-640.

Kelcey, B., Dong, N., Spybrook, J., & **Cox, K.** (2017). Statistical power for causally-defined indirect effects in group-randomized trials with individual-level mediators. *Journal of Educational and Behavioral Statistics*, 42, 499-530.

#### *Book Chapters*

**Cox, K.**, Lambert, R., & Hitchcock, J.H. (2021). Multiple linear regression analysis with qualitative data that have been quantitized. In T. Onwuegbuzie & B. Johnson (Eds.), *The reviewer's guide to mixed methods research analysis*. Routledge.

#### *Technical Reports*

Benson, T., **Cox, K.** (2021). *Racial Equity Audit for San Marcos CISD*. Mooresville, NC: Tracey A. Benson Consulting.

Wodruff, S. B., Li, Y. & **Cox, K.** (2014). *Evaluation of University at Buffalo/Buffalo Public Schools (UB/BPS) Interdisciplinary Science and Engineering Partnership: Annual report 2014-2015*. Oxford, OH: Ohio's Evaluation & Assessment Center for Mathematics and Science Education.

Wodruff, S. B., Li, Y. & **Cox, K.** (2013). *Evaluation of University at Buffalo/Buffalo Public Schools (UB/BPS) Interdisciplinary Science and Engineering Partnership: Annual report 2012-2013*. Oxford, OH: Ohio's Evaluation & Assessment Center for Mathematics and Science Education.

#### *Works in progress*

Younis, M. C. Z., Kudlats, J., **Cox, K.**, La Serna, J., Shore, R. A., Watson, J. R. (revise and resubmit). Teachers' perspectives of principals' invitational leadership behaviors, teacher job satisfaction and principal effectiveness in high-poverty rural elementary schools. *Leadership and Policy in Schools*.

Lambert, R., Moore, M., Schwanzer, A., & **Cox, K.** (under review). Examining the factor structure of the perceived stress scale using a correlated traits correlated methods framework. *SAGE Open*.

**Cox, K.**, Kelcey, B., \*Luce, H. (under review). Power to detect moderated effects with random slopes in partially nested designs. *Biometrical*.

**Cox, K.**, & Kelcey, B. (under review). Croon's bias corrected estimation for multilevel structural equation models with non-normal indicators and model misspecifications. *Educational and Psychological Measurement*.

**Cox, K.**, & Kelcey, B. (under review). A Bayesian partial posterior predictive distribution test for multilevel mediation. *Statistica Neerlandica*.

**Cox, K.**, & Kelcey, B. (in preparation). Croon's bias-corrected estimation for multilevel structural equation models with latent interactions.

**Cox, K.,** Kelcey, B., Luce, H. (in preparation). Power to detect moderated effects in three-level partially nested designs.

#### **Conference Presentations** (# refereed presentations)

##### *National/International*

**Cox, K.,** Kelcey, B., Bai, F., & Luce, H. (2022, April). *Power to Detect Moderated Effects in Three-level Partially Nested Designs*. Paper to be presented at the American Educational Research Association Annual Meeting, Virtual/online.

**Cox, K.,** Kelcey, B., & Bai, F. (2022, April). *Croon's Estimation of Structural Equation Models with Partially Nested Data*. Poster to be presented at the American Educational Research Association Annual Meeting, Virtual/online.

Kelcey, B., **Cox, K.,** & Bai, F., (2022, April). *Approximate Measurement Invariance Methods for Harmonizing Classroom Observation Scores Across Disparate Conditions*. Paper to be presented as part of a Symposium on The Affordances and Limitations of Different Analytic Models for Data from Classroom Observation Systems at the American Educational Research Association Annual Meeting, Virtual/online.

Kelcey, B., Bai, F., & **Cox, K.** (2022, April). *n-Level SEM with Small to Moderate Samples*. Poster to be presented at the American Educational Research Association Annual Meeting, Virtual/online.

Kelcey, B., **Cox, K.,** & Bai, F., (2022, April). *Structural After Measurement Estimation of Three-Level Structural Equation Models*. Paper to be presented at the American Educational Research Association Annual Meeting, Virtual/online.

**Cox, K.,** & Kelcey, B. (2021, September). *Power to Detect Moderated Effects in Partially Nested Designs Involving Random Slopes*. Paper presented at the meeting of The Society for Research on Educational Effectiveness, Virtual/online.

**Cox, K.,** & Kelcey, B. (2021, September). *Moderation and Mediation When Variables Are Measured With Error*. Paper presented at the meeting of The Society for Research on Educational Effectiveness, Virtual/online.

**Cox, K.** & Kelcey, B. (2021, April). *Comparing Statistical Power for Detecting Moderation Effects in Partially Nested Designs When Moderators Vary Within or Within and Between Groups*. Paper presented at the American Educational Research Association Annual Meeting, Virtual/online.

**Cox, K.** (2021, April). *Croon's Corrections for Estimating Single-Level Latent Interactions*. Poster presented at the American Educational Research Association Annual Meeting, Virtual/online.

Kelcey, B., Bai, F., & **Cox, K.** (2021, April). *Flexible Bias-Corrected Multilevel Factor Score Path Analysis*. Poster presented at the American Educational Research Association Annual Meeting, Virtual/online.

Toraman, S., **Cox, K.,** & Plano Clark, V. (2021, April). *Can Adoption of Mixed Methods Research Be Measured? A Mixed Methods Study of Dissertation Abstracts*. Paper presented at the American Educational Research Association Annual Meeting, Virtual/online.

- Cox, K.** & Kelcey, B. (2020, October). *Adequate Sample Sizes for Detecting Moderation Effects in Partially Nested Designs*. Paper presented at the American Evaluation Association: Eval20 Virtual Conference.
- Bai, F., & Kelcey, B., & **Cox, K.** (2020, October). *Moderation With Latent Variables: A Comparative Analysis of Estimators*. Paper presented at the American Evaluation Association: Eval20 Virtual Conference.
- Cox, K.** & Kelcey, B. (2020, April). *Robustness of a Limited Information Estimator to Misspecified Multilevel Structural Equation Models and Small Samples*. Paper was to be presented at the American Educational Research Association Annual Meeting, San Francisco, CA.
- Kelcey, B. & **Cox, K.** (2020, April). *Croon's Bias-Corrected Estimator Small to Moderate Scale Multilevel Structural Equation Models*. Paper was to be presented at the American Educational Research Association Annual Meeting, San Francisco, CA.
- Toraman, S., **Cox, K.**, Plano Clark, V., & Dariotis, J. K. (2020, April). *The Current Status of Graduate Students' Mixed Methods Research Practices in Dissertation and Thesis Abstracts*. Paper was to be presented at the American Educational Research Association Annual Meeting, San Francisco, CA.
- Cox, K.**, & Kelcey, B. (2020, March). *Evaluating the Performance of Croon's Method of Moments Corrected Maximum Likelihood Estimator with Cluster-randomized Studies Probing Mediation*. Paper was to be presented at the meeting of The Society for Research on Educational Effectiveness, Washington D.C.
- Cox, K.**, Kelcey, B., Xie, Y., & Bai, F. (2020, March). *Experimental Power for Three-Level School-Randomized Studies Probing Mediation*. Paper was to be presented at the meeting of The Society for Research on Educational Effectiveness, Washington D.C.
- Cox, K.** & Kelcey, B. (2019, November). *Statistical Power in Partially Nested Designs Probing Multilevel Moderation*. Paper presented at the American Evaluation Association: Evaluation 2019, Minneapolis, MN.
- Kelcey, B. & **Cox, K.** (2019, November). *Analysis of Moderator Effects in Small Scale Multilevel Studies with Latent Variables*. Paper presented at the American Evaluation Association: Evaluation 2019, Minneapolis, MN.
- #Kelcey, B., **Cox, K.**, & Xie, Y. (2019, May). *Experimental Design for Studies Probing Multilevel Mediation*. Paper presented at the Society for Prevention Research Conference, San Francisco, CA.
- Cox, K.** & Kelcey, B. (2019, April). *Assessing Multilevel Mediation with the Partial Posterior  $p$  Value*. Paper presented at the American Educational Research Association Annual Meeting, Toronto, Canada.
- Cox, K.**, & Kelcey, B. (2019, April). *Statistical Power and Optimal Design for Multisite Randomized Studies When the Outcome is not Fully Reliable*. Paper presented at the American Educational Research Association Annual Meeting, Toronto, Canada.
- Kelcey, B. & **Cox, K.** (2019, April). *Power and Design in Clustered Regression Discontinuity Designs Probing Mediation*. Paper presented at the American Educational Research Association Annual Meeting, Toronto, Canada.

- Cox, K., & Kelcey, B.** (2019, March). *Statistical Power and Optimal Design for Cluster-Randomized Studies When the Outcome is not Fully Reliable*. Paper presented at the meeting of The Society for Research on Educational Effectiveness, Washington D.C.
- Kelcey, B., & **Cox, K.** (2019, March). *Statistical Power for Mediation Effects in Three-Level Group Randomized Trials*. Paper presented at the meeting of The Society for Research on Educational Effectiveness, Washington D.C.
- #**Cox, K.**, (2018, November). Invited Panelist: "CADRE Fellows Orientation", Education Development Center, Waltham, MA.
- Kelcey, B., **Cox, K.**, & Dong, N. (2018, November). *Apportioned Multilevel Structural Equation Modeling: An Unbiased and Efficient Alternative to Multilevel Structural Equation Modeling in Small to Moderate Samples*. Paper to be presented at the 40th Annual Association for Public Policy Analysis and Management (APPAM) Research Conference, Washington, DC.
- Kelcey, B., **Cox, K.**, & Dong, N. (2018, November). *Experimental Design and Analysis of Multilevel Mediation When Measures Are Subject to Measurement Error*. Paper presented at American Evaluation Association: Evaluation 2018, Cleveland, OH.
- Cox, K.**, & Kelcey, B. (2018, April). *The Robustness of Statistical Power to Parameter Value Misspecifications in Group-Randomized Studies of Mediation*. Paper presented at the 2018 American Educational Research Association Annual Meeting, New York, NY.
- Kelcey, B., **Cox, K.**, & Dong, N. (2018, April). *Correcting for Unreliability in Power Analyses of Cluster-randomized Trials of Mediation*. Paper presented at the 2018 American Educational Research Association Annual Meeting, New York, NY.
- Cox, K.**, Kelcey, B., & Shen, Z. (2017, April). *Power and Optimal Sample Allocation in Cluster-randomized Trials of Upper-level Mediation*. Paper presented at the 2017 American Educational Research Association Annual Meeting, San Antonio, TX.
- Kelcey, B., Dong, N., Spybrook, J., & **Cox, K.** (2017, April). *Statistical Power for Individual and Contextual Mediation in Cluster-randomized Designs*. Paper presented at the 2017 American Educational Research Association Annual Meeting, San Antonio, TX.
- Kelcey, B., & **Cox, K.** (2017, March). *Statistical Power for Indirect Effects in Clustered Regression Discontinuity Designs*. Paper presented at the meeting of The Society for Research on Educational Effectiveness, Washington D.C.
- Kelcey, B., **Cox, K.**, Dong, N., and Spybrook, J. (2016, October). *Designing multilevel mediation studies using the PowerUp! software*. Paper presented at the American Evaluation Association: Evaluation 2016, Atlanta, GA.
- Zhang, J., Shen, Z., **Cox, K.**, Hart, J.R., and Swoboda, C. (2016, May). *Examining the effects of including differently correlated auxiliary variables in multiple imputation models*. Poster presented at the 2016 Modern Modeling Methods Conference, Storrs, CT.
- Cox, K.**, Hart, J.R., Zhang, J., Shen, Z., and Swoboda, C. (2016, April). *Effect of auxiliary variables with complex correlations on multiple imputation: Initial results*. Poster presented at the 2016 American Educational Research Association Annual Meeting: Division D In-Progress Research Gala, Washington D.C.

Kelcey, B., Wang, S., & Cox, K. (2016, March). *High-dimensional explanatory random item effects models for rater-mediated assessments*. Paper presented at the meeting of The Society for Research on Educational Effectiveness, Washington D.C.

#### *State/Regional Presentations*

#Cox, K., (2020, February). Invited Panelist: “Navigating the Job Market”, University of Cincinnati. CECH Educational Studies Program Panel, Cincinnati, OH.

Cox, K., & Kelcey, B. (2018, October). *Consequences of Parameter Values Misspecification When Planning Group-randomized Mediation Studies with an Individual-Level Mediator*. Paper presented at the 2018 Mid-Western Educational Research Association Annual Meeting, Cincinnati, OH.

#Cox, K., (2018, April). *The Robustness of Statistical Power to Parameter Value Misspecifications in Group-Randomized Studies of Mediation*. Paper presented at University of Cincinnati Research Week 2018, Cincinnati, OH.

#Cox, K., (2018, February). Invited Panelist: “Applications of Latent Variable Modeling Across Disciplines”, University of Cincinnati. CECH Data Community Presentation, Cincinnati, OH.

Cox K., (2016, March). *Empirically estimated design parameters for cluster randomized trials with educational outcomes: A review of the current collection*. Poster presented at the Graduate Student Expo and Poster Forum 2016, University of Cincinnati.

### **Grants and Contracts**

#### *University Faculty Development Grants*

Cox K. (2020). *Investigating Estimators of Multilevel Structural Equation Models with Small Sample Sizes*; University of North Carolina at Charlotte Faculty Research Grant, Funded: \$5,900.

Cox K. (Summer 2019). *Optimal Design of Cluster-Randomized and Multisite Studies Using Fallible Outcome Measures*; University of Cincinnati Research Council Graduate Student Stipend and Research Cost Award for Faculty-Student Collaboration, Funded: \$5,000.

### **SERVICE/ OUTREACH/ ENGAGEMENT**

#### **Service to the University**

2021- Member, Cato College of Education Faculty Research Award Committee

2021- Race and Equity Priority Working Group: Workload Committee

2020- Co-organizer, Educational Research, Measurement, and Evaluation Program Colloquium

- 2020- Member, Department of Educational Leadership Legacy (Dissertation of the Year) Award Committee
- 2019- Member, Educational Research, Measurement, and Evaluation Program Admission Committee

### **Service to the Profession**

#### *Occasional Manuscript Reviewer*

Journal of Research on Educational Effectiveness  
Psych  
Statistics in Medicine

#### *Textbook Reviewer*

5th Edition of *Principles and Practice of Structural Equation Modeling* (select chapters)

#### *Conference Proposal Reviewer*

- 2017-2022 American Educational Research Association Annual Conference  
2020 American Evaluation Association Conference  
2019-2021 Society for Research on Educational Effectiveness Annual Conference

#### *Grant Proposal Reviewer*

- 2017 National Science Foundation grant review panel

### **Service to the Community and Practitioners**

#### *Community workshops and presentations*

Spybrook, J., Kelcey, B., Dong, N., & **Cox, K.** (2019, April). *Designing Adequately Powered Cluster Randomized Trials to Detect Main Effects, Moderation, and Mediation*. Workshop to be presented at the 2019 American Educational Research Association Annual Meeting, Toronto, Canada.

**Cox, K.**, Shen, Z., & Kelcey, B. (2018, October). *Asking 'Why?' in Educational Research: Understanding and Planning Cluster-randomized Studies Aimed at Detecting Mediation*. Workshop presented at the 2018 Mid-Western Educational Research Association Annual Meeting, Cincinnati, OH.

Spybrook, J., Kelcey, B., Dong, N., & **Cox, K.** (2018, April). *Designing Adequately Powered Cluster Randomized Trials to Detect Main Effects, Moderation, and Mediation*. Workshop presented at the 2018 American Educational Research Association Annual Meeting, New York, NY.

### **HONORS AND AWARDS**

- 2017 Unpacking Teacher Effectiveness in the Context of IES Funded Proposals: Virginia Education Science Training Program



*One of 20 participants invited to attend 2-day conference addressing contemporary issues in teacher effectiveness research at the University of Virginia.*

- 2016 American Educational Research Association Institute on Statistical Analysis for Education Policy on Using Large-Scale Data to Study Mathematics Education and Outcomes  
*Competitive, invitation only workshop organized by American Educational Research Association and supported by the National Science Foundation*
- 2016 Finalist for Top Proposal to the 2016 American Educational Research Association Annual Meeting: Division D In-Progress Research Gala
- 2016 Exemplary Poster Presentation in the category of Social and Behavioral Sciences  
University of Cincinnati, Graduate Student Expo and Poster Forum
- 2015 Project Excellence Award for Teaching, 2015  
Area Progress Council of Warren County Ohio

### **PROFESSIONAL MEMBERSHIPS**

American Evaluation Association  
American Educational Research Association  
Society for Research on Educational Effectiveness