

## David Michael Dueber

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University of Toledo

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### Education

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- Doctor of Philosophy in Quantitative and Psychometric Methods** May 2020  
University of Kentucky  
Advisor: Dr. Michael Toland  
Dissertation: A Bifactor Approach to Dimensionality Assessment
- Master of Arts in Mathematics** May 2006  
University of Wisconsin
- Bachelor of Science in Mathematics and Chemical Engineering** May 2003  
University of Illinois at Urbana-Champaign

### Selected Teaching Experience

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- Advanced Research Methods Teaching Assistant** Fall 2017 – Spring 2019  
University of Kentucky, Department of Educational, School, & Counseling Psychology  
Modified all course materials and assessments for “Gathering, Analyzing, & Using Educational Data II.” Assisted students during online and face-to-face office hours in “Gathering, Analyzing, & Using Educational Data I” and “Gathering, Analyzing, & Using Educational Data II.”
- Teaching Assistant to Dr. Michael Toland** Fall 2016 – Spring 2017  
University of Kentucky, Department of Educational, School, & Counseling Psychology  
Modified all course materials and assessments for an Introduction to Psychometrics course. Created all course materials and assessments for a new course in Structural Equation Modeling. Assisted students during online and face-to-face office hours.
- Lecturer** Fall 2009 – Spring 2014  
University of Middle Tennessee State University, Department of Mathematics  
Designed and implemented all course materials and assessments for five to six face-to-face sections of introductory mathematics courses per semester, ranging from College Algebra through Calculus.

## Research Experience

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Shriner's Hospital, Lexington KY Quantitative Methodology Consultant	9/2018 – Current
American Board of Family Medicine Psychometrics Intern	8/2017 – 12/2017
Applied Psychometrics Strategies Lab, University of Kentucky Research Lab Member	8/2016 – 5/2020
Student Director	8/2017 – 5/2018
University of Kentucky College of Education Statistical Consultant/Postdoctoral Scholar for Dr. Beth Rous	7/2020 – Current
Research Assistant to Dr. Michael Toland	8/2019 – 5/2020
Research Assistant to Dr. Jonathan Thomas	8/2015 – 5/2017
Quantitative Methodology Consultant to Project TECHNO	8/2017 – Current
Quantitative Methodology Consultant to Dr. Margaret Mohr-Schroeder	1/2017 – 5/2019

## Publications

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- Lingat, J. E., Toland, M. D., & **Dueber, D. M.** (Accepted). The Brief Course Belonging Scale: Developing a Measure of Postsecondary Students' Course-Level Sense of Belonging Across Online and Face-To-Face Modalities. *Journal of College Student Development*.
- Chapman, P., **Dueber, D. M.**, ..., Walker, J. L. (Accepted). Guided growth procedures: Broken tension band implants in patients with Blount disease. *Journal of Pediatric Orthopaedics*.
- Dueber, D. M.** & Toland, M. D. (Online First). A bifactor approach to subscore analysis. *Psychological Methods*. <http://doi.org/10.1037/met0000459>
- Thomas, J. N., **Dueber, D. M.**, Fisher, M. H., Jong, C., & Schack, E. O. (Online First). Professional noticing coherence: Exploring relationships between component processes. *Mathematical Thinking and Learning*. <http://doi.org/10.1080/10986065.2021.1977086>
- Dueber, D. M.**, Toland, M. D., Lingat, J. E. M., Love, A. M. A., Qiu, C., Wu, R., Brown, A. V. (Online First). To reverse item orientation or not to reverse item orientation, that is the question. *Assessment*. <https://doi.org/10.1177/10731911211017635>
- Bliton, C., Roche, M., **Dueber, D. M.**, & Pincus, A. (Online First). Examining the structure and validity of self-report measures of DSM-5 alternative model for personality disorders criterion A. *Journal of Personality Disorders*. [https://doi.org/10.1521/pedi\\_2021\\_35\\_531](https://doi.org/10.1521/pedi_2021_35_531)
- Toland, M. D., Grisham-Brown, J., Waddell, M., Crawford, R., & **Dueber, D. M.** (Online First). Scale Evaluation and Eligibility Determination of a Field-Test Version of the Assessment, Evaluation, and Programming System 3rd Edition. *Topics in Early Childhood Special Education*. <https://doi.org/10.1177/0271121420981712>

- Jong, C., Schack, E. O., Fisher, M. H., Thomas, J. N., & **Dueber, D. M.** (2021). What role does professional noticing play? Examining (dis)connections with affect and pedagogical content knowledge. *ZDM*, *53*, 151-164. <https://doi.org/10.1007/s11858-020-01210-5>
- Wilson, E. J., Stapinski, L., **Dueber, D. M.**, Rapee, R. M., Burton, A. L., & Abbott, M. J. (2020). Psychometric properties of the Intolerance of Uncertainty Scale-12 in generalized anxiety disorder: Assessment of factor structure, methodological quality and clinical utility. *Journal of Anxiety Disorders*, *76*, 102309. <https://doi.org/10.1016/j.janxdis.2020.102309>
- Toland, M. D., Bowen, P., & **Dueber, D. M.** (2020). Psychometric analysis of work-related, after-hours contact and associated psychosocial measurement scales for construction professionals in South Africa. *Journal of Construction Engineering and Management*, *146*(7), 04020062. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001845](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001845)
- Thomas, J. N. & **Dueber, D. M.** (2020). Thinking with our hands. *Mathematics Teacher: Learning and Teaching PK-12*, *113*(1), 69-73. <https://doi.org/10.5951/MTLT.2019.0094>
- Rosenkrantz, D., Rostosky, S., Toland, M. D., & **Dueber, D. M.** (2020). Cognitive-affective and religious values associated with parental acceptance of an LGBT child. *Psychology of Sexual Orientation and Gender Diversity*, *7*(1), 55-65. <https://doi.org/10.1037/sgd0000355>
- Thomas, J. N., **Dueber, D. M.**, Fisher, M. H., Jong, C., & Schack, E. O. (2020). Professional noticing into practice: An examination of inservice teachers' conceptions and enactment. *Investigations in Mathematics Learning*, *12*(2), 11-123. <https://doi.org/10.1080/19477503.2019.1681834>
- Dueber, D. M.**, Love, A. M. A., & Toland, M. D., (2019). Comparison of single-stimulus format and forced-choice format instruments using Thurstonian item response theory. *Educational and Psychological Measurement*, *79*(1), 108-128. <https://doi.org/10.1177/0013164417752782>
- Fisher, M. H., Thomas, J. N., Jong, C., Schack, E. O., & **Dueber, D. M.** (2019). Comparing preservice teachers' professional noticing skills in elementary mathematics classrooms. *School Science and Mathematics Journal*, *119*(3), 142-149. <https://doi.org/10.1111/ssm.12324>

## Under Review

- Walker, J. L., ..., **Dueber, D. M.**, ... (Under Review). Predicting deformity correction of lateral tibial tension band plating in late-onset tibia vara. *Journal of Pediatric Orthopaedics*.
- Walker, J. L., ..., **Dueber, D. M.**, ... (Under Review). Predicting failure of correction with tension band plating in early-onset tibia vara.

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## Grants

### PENDING

- Title:** COMPASS Across Settings (CAST) for Integrating School, Home, and Community Services and Improving Transition Outcomes for Students with ASD

**Funding Agency:** IES (Special Education Research Grants – Development and Innovation)  
**PI:** Lisa Ruble (Ball State University)  
**Timeline:** August 2023 – July 2027  
**Role:** Postdoctoral Researcher  
**Total Budget:** \$2,000,000  
**Effort:** 3% Years 2-4

**Title:** Interdisciplinary Convergence Research within Engineering and Public Health Disciplines  
**Funding Agency:** NSF  
**PI:** Devinder Kaur (University of Toledo)  
**Timeline:** September 2023 – August 2026  
**Role:** Postdoctoral Researcher  
**Total Budget:**  
**Effort:** 1%

**Title:** CyberCorps Scholarship for Service: Academic Student Success of Undergraduate and Graduate Education in Cybersecurity (SFS-ASSURE-C)  
**Funding Agency:** NSF  
**PI:** Alaraje Nasser (University of Toledo)  
**Timeline:** January 2023 – December 2026  
**Role:** Postdoctoral Researcher  
**Total Budget:**  
**Effort:** 1.92%

**Title:** Partnership to Cultivate Science Teacher Leaders in Rural and Urban School Districts  
**Funding Agency:** NSF (Robert Noyce Teacher Scholarship Program – Track 3)  
**PI:** Michael Toland (University of Kentucky)  
**Timeline:** April 2023 – March 2028  
**Role:** Postdoctoral Researcher  
**Total Budget:** \$1,500,000  
**Effort:** 20%

**Title:** The Impact of Breathe-Ease on Teacher-Student Interactions  
**Funding Agency:** IES (Special Education Research Grants – Development and Innovation)  
**PI:** Lisa Ruble (Ball State University)  
**Timeline:** August 2023 – July 2025  
**Role:** Consultant  
**Total Budget:** \$800,000  
**Effort:** 6.25%

**Title:** High Impact Models of Early Intervention Support: Accelerating Child Outcomes and Systems Recovery  
**Funding Agency:** IES  
**PI:** Scott Tomchek (University of Louisville)  
**Timeline:** July 2023 – June 2025  
**Role:** Consultant  
**Total Budget:**  
**Effort:** 1.5%

## **NOT FUNDED**

**Title:** Comparative Study of COMPASS Adaptations for Improving Public School Outcomes of Children with Autism Spectrum Disorder Using ACT Smart.  
**Funding Agency:** NIH (Clinical Trials to Test the Effectiveness of Treatment, Preventive, and Services Interventions)  
**co-PIs:** Lisa Ruble (Ball State) and Amy Drahota (Michigan State)  
**Timeline:** July 2023-May 2028  
**Total Budget:** \$3,802,091

**Role:** Collaborator **Effort:** 5% years 1-4, 50% year 5

**Title:** High Impact Models of Early Intervention Support: Accelerating Child Outcomes and Systems Recovery

**Funding Agency:** IES (Research to Accelerate Pandemic Recovery in Special Education Assistance)

**PI:** Scott Tomchek (University of Louisville)

**Timeline:** July 2022 – June 2024

**Total Budget:** \$1,000,000 (approx.)

**Role:** Collaborator

**Effort:** 50%

**Title:** Promoting Safety and Acceptance: Evidence for a Police Autism Training

**Funding Agency:** Organization for Autism Research (Applied Research Competition)

**PI:** Abigail Love

**Timeline:** January 2022 – August 2023

**Total Budget:** \$40,000

**Role:** Co-Investigator

**Effort:** 2%

**Title:** Super STEM Saturdays for Engaging the Community

**Funding Agency:** National Science Foundation (Advancing Informal STEM Learning)

**PI:** Sahar Alameh (University of Kentucky)

**Timeline:** July 2021 – June 2023

**Total Budget:** \$299,420

**Role:** Consultant

**Effort:** 5%

**Title:** Development of the Targeted Assessment for Ethical Reasoning and Descriptive Insight Skills (TARDIS)

**Funding Agency:** NSF (IUSE:EHR - Engaged Student Learning Track, Exploration and Design Tier)

**PI:** Michael Toland (University of Kentucky)

**Timeline:** January 2020 – December 2021

**Total Budget:** \$299,742

**Role:** Postdoctoral Researcher

**Effort:** 50%

## Software

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**Dueber, D. M.** (2020). BifactorIndicesCalculator. R package version 0.2.0. <https://CRAN.R-project.org/package=BifactorIndicesCalculator>

**Dueber, D. M.** (2019). dmacs: Measurement Nonequivalence Effect Size Calculator. R package version 0.1.0. <https://CRAN.R-project.org/package=dmacs>

**Dueber, D. M.** (2017). Bifactor Indices Calculator: A Microsoft Excel-based tool to calculate various indices relevant to bifactor CFA models. <https://doi.org/10.13023/edp.tool.01>

**Dueber, D. M.** (2017). A javascript assistant for scoring open response data using a flowchart or rubric.

### Software Proficiencies

R, Mplus, Microsoft Excel, SPSS, IRTPro, WINSTEPS/FACETS, HLM, FlexMIRT

## Selected Projects and Responsibilities

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### **Graduate Student Survey, Supervisor: Michael D. Toland, University of Kentucky**

- Merged and cleaned survey and demographic data from 825 graduate students
- Collaborated with Graduate Student Council representatives to establish clear aims and research questions
- Performed CFA, multigroup CFA, regression, and ANOVA analyses
- With the cooperation of stakeholders, produced a final report on the survey

### **Resident Connection Project, Supervisor: Michael D. Toland, University of Kentucky**

- Was part of a team that merged, cleaned, and managed a longitudinal (6 time points) dataset of survey and demographic data for 6632 students living in on-campus residence halls
- Collaborated closely with stakeholders to determine research questions, relevant covariates, and appropriate models for analysis
- Evaluated measurement quality of outcome measures using CFA and multi-group CFA models
- Estimated and interpreted parallel latent growth models with distal outcome and covariates
- Currently performing longitudinal dyadic data analysis on roommates

### **Scoliosis Outcome Measures, Supervisor: Donna Oeffinger, Shriners Hospital, Lexington, KY**

- Assessed dimensionality of two scoliosis quality of life inventories using bifactor CFA modeling and classical test theoretic tools
- Assessed measurement invariance of inventories using multigroup CFA
- Performed common person linking of inventories using both observed score and Rasch methods

### **STEM Literacy Inventory, Supervisor: Margaret Mohr-Schroeder, University of Kentucky**

- Wrote items with a team for a new inventory measuring STEM literacy
- Collaboratively designed and implemented internal item review, expert review, cognitive interviews, and selection of survey items
- Participated in data entry and handled data cleaning and management from administration of inventory during three years of a STEM summer camp.
- Used EFA (summer 1) and IRT (summers 2 & 3) for selection of final items and evaluation of structure of the data
- Currently writing manuscript

### **Statistical Consulting**

- Applied a multi-unidimensional IRT model to a battery of work-contact scales and developed a custom spreadsheet for performing graphical item fit testing. Client: Paul Bowen, University of Cape Town

- Consulted on several projects using bifactor CFA. Created modified models due to invalid parameter estimates in standard bifactor models. Computed and interpreted bifactor indices. Clients: Maree Abbott, University of Sydney; Mike Roche, Penn State Altoona; Ryon McDermott, Southern Alabama University
- Performed power and statistical analyses for retrospective translation pathology research projects. Clients: Derek Allison, University of Kentucky; Therese Bocklage, University of Kentucky

## Conference Posters and Presentations

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- Dueber, D. M.**, Ruble, L., McGrew, J., Ogle, L., & Cormier, C. J. (2022, August). *Latent profiles of burnout in special education teachers*. Poster accepted for presentation at the annual meeting of the American Psychological Association, Minneapolis, MN.
- Walker, J. L., ..., **Dueber, D. M.**, ... (2022, May). *Tension band implant breakage is correlated with pre-op body mass index and severity of varus deformity in patients with Blount disease-A multi-center study*. Paper accepted for presentation at the annual meeting of the Pediatric Orthopaedic Society of North America, Vancouver, BC, Canada.
- Walker, J. L., **Dueber, D. M.**, ... (2022, May). *Deformity correction with lateral tension band plating (LTBP) for early-onset Blount disease- Predictive factors from a multi-center study*. Paper accepted for presentation at the annual meeting of the Pediatric Orthopaedic Society of North America, Vancouver, BC, Canada.
- Walker, J. L., Dueber, D. M., ... (2021, May). *Prediction of varus deformity correction by lateral tension band plating at the knee in late-onset Blount Disease – A multi-center study*. Abstract published in Proceedings of the Pediatric Orthopaedic Society of North America Annual Meeting, Dallas TX
- Bliton, C. F., Roche, M. J., Pincus, A. L., & **Dueber, D. M.** (2021, March). *Examining the structure and validity of Criterion A self-report measures*. In M. Roche (Chair), *Advancements in Measuring Criterion A of the Alternative Model for Personality Disorders*. Symposium presented at the Society for Personality Assessment Annual Meeting, Virtual.
- Lingat, J. M., Mantooth, R., **Dueber, D. M.**, Li, N., & Toland, M. D. (2020, August). *Detecting gender-based & across campus differential item functioning on a sense of belonging scale in higher education*. Paper accepted for presentation at the annual meeting of the American Psychological Association, Washington, DC.
- Niu, C., Toland, M. D., **Dueber, D. M.**, & Li, N. (2020, April). *Comparing FDR Correction Methods in Using Rasch Trees Modeling for DIF Detection*. Paper accepted for presentation at the International Objective Measurement Workshop, Berkeley, CA.
- Berney, E. C., Reese, R. J., Toland, M. D., **Dueber, D. M.**, Qiu, C., Clement, T., Blevins, J., & Kehrwald, N. (2019, August). *Transporting a systematic client feedback approach into a student-life belongingness intervention*. Poster accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.
- Dueber, D. M.**, Hanley, C., & Toland, M. D. (2019, August). *Measurement error meta-analysis*. Poster accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.

- Dueber, D. M.**, & Toland, M. D. (2019, August). *The people are weird fit index*. Poster accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.
- Lingat, J. M., Toland, M. D., **Dueber, D. M.**, Love, A. M. A, Qiu, C., Wu, R., & Brown, A. V. (2019, August). *Demystifying positive and negative phrasing effects*. Paper accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.
- Qiu, C., **Dueber, D. M.**, Toland, M. D., Berney, E. C., Zhou, H., Blevins, J., Kehrwald, N., & Clement, T. (2019, August). *RA and resident belongingness: Multilevel longitudinal analysis*. Poster accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.
- Qiu, C., Zhou, H., **Dueber, D. M.**, & Toland, M. D. (2019, August). *When does measurement error break path analysis, and what should we do about it?* Poster accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.
- Toland, M. D., Spiker, D., Li, C., Shen, L., **Dueber, D. M.**, & Qiu, C. (2019, August). *College students' roommate satisfaction: Multilevel longitudinal dyadic analysis*. Poster accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.
- Wu, R., Chiu, C. Y., **Dueber, D. M.**, & Lange, D. D. (2019, August). *The multidimensionality of the revised developmental work personality scale*. Poster accepted for presentation at the 127th American Psychological Association Conference, Chicago, IL.
- Schack, E.O., **Dueber, D.**, Thomas, J., Fisher, M.H., Jong, C. (2019, April). *Computer-programmed decision trees for assessing teacher noticing*. Paper accepted for presentation at the American Educational Research Association Conference, Toronto, Canada.
- Hakim, N., **Dueber, D. M.**, Cornea, V., Dueber, J. C., & Bocklage, T. (2019, March). Basaloid Squamous Cell Carcinoma: Novel SOX10-Expressing Subset Correlates with Specific Histopathology and Behavior. Poster accepted for presentation at the 108th meeting of the United States & Canadian Academy of Pathology, National Harbor, MD.
- Fisher, M.H., Thomas, J., Jong, C., Schack, E.O., **Dueber, D. M.** (2018, November). *Professional noticing in complex mathematical contexts: Examining preservice teachers' changes in performance*. Paper presented at the North American Group of the Psychology of Mathematics Education, Greenville, SC.
- Fisher, M.H., Schack, E.O., Thomas, J., Jong, C., **Dueber, D. M.**, (2018, October). *The challenges of measuring content knowledge of preservice elementary teachers*. Paper presented at the meeting of the School Science and Mathematics Association, Little Rock, AR.
- Jackson, C., Cavalcanti, M., **Dueber, D. M.**, Maiorca, C., Roberts, T., Delaney, A., Bush, S., Schroeder, C., & Mohr-Schroeder, M. J. (2018, October). *Operationalizing Equity-Based STEM Literacy in Designing Quantitative Survey*. Paper presented at the meeting of the School Science and Mathematics Association, Little Rock, AR.
- Dueber, D. M.**, Clements-Hickman, A. L., Ryser-Oatman, T., & Toland, M. D. (August, 2018). *Dimensionality of the patient version of the Working Alliance Inventory-Short Form Revised*. Paper presented at the meeting of the American Psychological Association, San Francisco, CA .
- Thomas, J., **Dueber, D. M.**, Fisher, M.H., Jong, C., Schack, E.O. (2018, April). *Professional noticing into practice: An examination of inservice teachers' conceptions and enactment*.



Paper presented at the meeting of the American Educational Research Association Conference, New York, NY.

Mohr-Schroeder, M. J., Jackson, C., Maiorca, C., Cavalcanti, M., **Dueber, D. M.**, Delaney, A., & Roberts, T. (2018, February). *Going beyond the framework: Operationalizing an equity framework in designing quantitative surveys*. Paper presented at the meeting of the Association of Mathematics Teacher Educators, Houston, TX.

**Dueber, D. M.**, Love, A. M. A., Toland, M. D., & Douin, T. A. (2017, April). *Comparison of single-stimulus format and forced-choice format instruments using Thurstonian item response theory*. Paper presented at the meeting of the American Educational Research Association, San Antonio, TX.

Thomas, J. N. & **Dueber, D. M.** (2017, February). *Exploring inservice teachers' perceptions of professional noticing*. Paper presented at the meeting of the Association of Mathematics Teacher Educators, Orlando, FL.

## Talks

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**Dueber, D. M.** (2019, May). *Reproducing published study results using summary statistics*. Invited presentation to the College of Business, University of Kentucky.

**Dueber, D. M.** & Wu, R. (2018, September). *Intensive workshop on Mplus*. Invited workshop presented for the Quantitative Initiative for Policy and Social Research (QIPSR), University of Kentucky, Lexington, KY.

Rosenkrantz, D. & **Dueber, D. M.** (2018, February). *Managing measurement error in regression analysis*. Applied Quantitative and Psychometric Series, University of Kentucky, Lexington, KY.

**Dueber, D. M.** & Zhou, H. (2018, February). *Power analysis*. Applied Quantitative and Psychometric Series, University of Kentucky, Lexington, KY.

**Dueber, D. M.** & Li, C. R. (2017, August). *Intensive workshop on Mplus*. Invited workshop presented for the Quantitative Initiative for Policy and Social Research (QIPSR), University of Kentucky, Lexington, KY.

**Dueber, D. M.** (2017, May). *Mediation Analysis and More*. Applied Quantitative and Psychometric Series, University of Kentucky, Lexington, KY.

**Dueber, D. M.** (2017, March). *How to create path diagrams in Powerpoint*. Available at <http://sites.education.uky.edu/apslab/resources>

**Dueber, D. M.** (2016, October). *Introduction to Mplus*. Applied Quantitative and Psychometric Series, University of Kentucky, Lexington, KY.