

Delwin Carter

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EDUCATION

Ph.D., Education (Defended June 2025)

- Emphases: (1) Quantitative Methods, (2) College Teaching
- Dissertation: *Understanding the performance of random intercepts latent transition analysis (RI-LTA): A Monte Carlo simulation study with MplusAutomation.*

M.A., Education (December 2020)

- Thesis: *Mixture models: Calculate the explained variance in distal outcomes from the categorical latent variable*
University of California, Santa Barbara (UCSB)

M.A., General Experimental Psychology (June 2016)

- Thesis: *Evaluating the 8-item patient health questionnaire's psychometric properties among Filipino emerging adults*

B.A., Psychology (June 2013)

California State University, Northridge (CSUN)

CERTIFICATIONS

- HSR Basic Course for Social-Behavioral Educational Researchers (2015 - 2016, 2024-2025) - Collaborative Institutional Training Initiative
- Summer Institute for Teaching Associates (August 2020) – UCSB
- Human Participants Protection Education for Research Teams (2015) - National Institutes of Health

SCHOLARSHIP

GRANTS

Carter, D. B. (PI). Support for computationally intensive Monte Carlo simulations of random intercepts latent transition analysis (RI-LTA). DISCOVER Allocation, ACCESS Program. Awarded 750,000 supercomputing credits (valued over \$5,000) in 2025 to enable large-scale simulation studies, enhancing methodological precision in educational data analysis.

Carter, D. B. (PI). *Understanding the performance of random intercepts latent transition analysis (RI-LTA): A Monte Carlo simulation study with MplusAutomation.* Gevirtz Graduate School of Education Dissertation Grant. University of California, Santa Barbara. Funded \$9,000 for dissertation research in 2022, enabling comprehensive simulation studies to refine educational data analysis techniques, contributing to the field's methodological advancements.

Carter, D. B. (PI). *Evaluating the 8-item patient health questionnaire's psychometric properties among Filipino emerging adults.* Thesis Support Funding. Office of Research and Graduate Studies, California State University, Northridge. Funded for \$1,000 in Spring 2015, which facilitated the collection and analysis of data to enhance mental health screening tools, impacting assessment practices in diverse populations.

JOURNAL ARTICLES

Romero, L. S., O'Malley, M., & **Carter, D.** (2025). Replication using confirmatory latent class analysis: A school climate example. *Journal of School Psychology, 110*, 101455. <https://doi.org/10.1016/j.jsp.2025.101455>

Lawrie, I. L., **Carter, D.**, Nylund-Gibson, K., & Kim, H. S. (2025). A tale of two belongings: Social and academic belonging differentially shape academic and psychological outcomes among university students. *Frontiers in Psychology*

- Moore, S. A., **Carter, D.**, Kim, E. K., Furlong, M. J., Nylund-Gibson, K., & Dowdy, E. (2024). Adolescents' covitality patterns: Relations with student demographic characteristics and proximal academic and mental health outcomes. *School Mental Health*. Advance online publication. <https://doi.org/10.1007/s12310-024-09663-9>
- Nylund-Gibson, K., Garber, A. C., **Carter, D. B.**, Chan, M., Arch, D. A., Simon, O., Whaling, K., Tartt, E., & Lawrie, S. I. (2023). Ten frequently asked questions about latent transition analysis. *Psychological Methods, 28*(2), 284-300. <https://doi.org/10.1037/met0000486>
- Dowdy, E., Furlong, M. J., Nylund-Gibson, K., Arch, D., Hinton, T., & **Carter, D.** (2023). Validating a brief student distress measure for schoolwide wellness surveillance. *Assessment for Effective Intervention, 48*(3), 159–169. <https://doi.org/10.1177/15345084221138947>
- Denson, N., Ing, M., Arch, D. A., Garber, A. C., Chan, M., **Carter, D. B.**, & Nylund-Gibson, K. (2022). A latent class analysis of students' openness to learning from diverse others. *Journal of Diversity in Higher Education*. Advance online publication. <https://doi.org/10.1037/dhe0000451>
- Furlong, M. J., Paz, J. L., **Carter, D.**, Dowdy, E., & Nylund-Gibson, K. (2022). Extending validation of a social emotional health measure for middle school students. *Contemporary School Psychology*. <https://doi.org/10.1007/s40688-022-00411-x>
- Wagle, R., Dowdy, E., Nylund-Gibson, K., Sharkey, J. D., **Carter, D.**, & Furlong, M. J. (2021). School belonging constellations considering complete mental health in primary schools. *Educational and Developmental Psychologist, 38*(2), 173-185. <https://doi.org/10.1080/20590776.2021.1964071>
- Furlong, M. J., Dowdy, E., Nylund-Gibson, K., Wagle, R., **Carter, D.**, & Hinton, T. (2020). Enhancement and standardization of a universal social-emotional health measure for students' psychological strengths. *Journal of Well-Being Assessment, 4*(3), 245-267. <https://doi.org/10.1007/s41543-020-00032-2>
- Hinton, T., Dowdy, E., Furlong, M. J., Nylund-Gibson, K., **Carter, D.**, & Wagle, R. (2020). Examining the social emotional health survey-secondary for use with Latinx youth. *Journal of Psychoeducational Assessment, 39*(2), 242-246. <https://doi.org/10.1177/0734282920953236>
- Wagle, R., Dowdy, E., Furlong, M. J., Nylund-Gibson, K., **Carter, D.**, & Hinton, T. (2020). Anonymous versus self-identified response formats for school mental health screening. *Assessment for Effective Intervention, 47*(2), 112-117. <https://doi.org/10.1177/1534508420959439>
- Laganá, L., Gavrilo, L., **Carter, D. B.**, & Ainsworth, A. T. (2017). A randomized controlled study on the effects of a documentary on students' empathy and attitudes towards older adults. *Psychology and Cognitive Sciences - Open Journal, 3*(3), 79-88. <https://doi.org/10.17140/pcsoj-3-127>
- Plunkett, S. W., White X., **Carter D. B.**, Horner M. E. F. (2016) Parental support and psychological control in relation to African American college students' self-esteem. *Journal of Africana Studies, 9*(4), 199-218.

JOURNAL ARTICLES ACCEPTED / IN PRESS

- Nylund-Gibson, K., Arch, D. N., & Carter, D. (in press). *Latent transition analysis with auxiliary variables: A demonstration of the ML 3-step and BCH methods in Mplus. The Quantitative Methods for Psychology.*

JOURNAL ARTICLES IN REVIEW

- Carter, D (under review) Relational Calibration: A Framework for Dynamic Instructional Regulation in Complex Learning Environments. *Journal of Instruction and Learning.*
- Carter, D. (under review). *Distal outcomes in mixture modeling: A guide for pairwise comparisons, multiplicity control, and effect size reporting. Behavior Research Methods* (Tutorial Special Collection).
- Carter, D., Plunkett, S., Alpizar, D., Ainsworth, A., & Laganá, L. (under review). *Psychometric evaluation of the 8-item Patient Health Questionnaire among Filipino American emerging adult men and women. Journal of Psychopathology and Behavioral Assessment.*

JOURNAL ARTICLES REVISION REQUESTED

- Hart, S. R., **Carter, D.**, Olwert, M. R., & Paul, R. P. (under review). A latent profile analysis of body image and disordered eating attitudes and behaviors in adolescent males. *Eating Behaviors.*

JOURNAL ARTICLES IN PREPARATION

Carter, D. (in preparation). Systematic review of latent transition analysis in practice, a Pilot Study.

Carter, D., & Nylund-Gibson, K. (in preparation). The systematic review of latent transition analysis in practice.

RESEARCH MONOGRAPHS

Carter D. B., Sharkey, J., Doty, S. (2018, December). *Moral reconation therapy engagement study: Client and counselor perspectives*. University of California Santa Barbara

Carter, D. B., Hunnicut, K., & Sharkey, J., (2018, November). *Santa Barbara County annual report: Public safety realignment October 2011 - December 2017*. University of California Santa Barbara

Carter, D. B., & Sharkey, J., (2018, August). *Substance abuse treatment court outcome evaluation*. University of California, Santa Barbara

Hunnicut, K., **Carter, D. B.,** & Sharkey, J., Cosden, M., (2018, March). *Santa Barbara County annual report: Public safety realignment October 2011 - December 2016*. University of California Santa Barbara

SELECTED PEER REVIEWED CONFERENCE PRESENTATIONS – 8 of 21 total conference presentations

Carter, D. (2026, April). *When is RI-LTA necessary? A Monte Carlo comparison of latent transition models*. Symposium presentation at the annual meeting of the American Educational Research Association, Los Angeles, CA, USA.

Carter, D., & Nylund-Gibson, K., (2023, April). *Understanding the performance of random intercept latent transition analysis under varied conditions and competing models*. Symposium talk presented at the annual meeting of the American Educational Research Association, Chicago, IL, USA.

Carter, D., Nylund-Gibson, K., Furlong, M. J., & Dowdy, E. (2022, April). *Random intercepts latent transition analysis: An illustration, comparison, and simulation* [Symposium presentation]. American Educational Research Association, San Diego, CA, USA.

Carter, D., & Nylund-Gibson, K. (2021, April). *Validation and calibration in mixture modeling: The exploratory factor analysis/confirmatory factor analysis of mixture models* [Symposium presentation]. American Educational Research Association, Online Format.

Carter, D., Garber A., Nylund-Gibson, K., Dowdy, E., & Furlong, M. J. (2021, April). *Understanding patterns of social-emotional strengths across students with and without disabilities: Different, not worse* [Symposium presentation]. American Educational Research Association, Online Format.

Carter, D., & Nylund-Gibson, K., (2019, April). *Mixture models: calculate the explained variance in distal outcomes from the categorical latent variable* [Symposium presentation]. American Educational Research Association, Toronto, ON, Canada.

Carter, D., & Nylund-Gibson, K., & Furlong, M., (2018, April). *The effect of item order on participants' response choices* [Roundtable presentation]. American Educational Research Association, New York, NY, USA.

Spina, A. D., & **Carter, D. B.,** (2018, April). *The influence of teacher gender on females' math self-efficacy* [Poster presentation]. American Educational Research Association, New York, NY, USA.

Carter, D. B., Laganá, L., Gavrilo, L., Sholl, K., & Prilutsky, R. (2016, May). *The initial validation of a non-medical stress scale created for ethnically diverse older women* [Poster presentation]. Association for Psychological Science, Chicago, IL, USA.

RESEARCH EXPERIENCE

Founder and Director (June 2021 – Present)

The MIX Institute UCSB, Santa Barbara, CA

<https://delwincarter.com/researchteam/>

- Founded lab for systematic review of 460+ articles on latent transition analysis, enhancing educational research.
- Supervised lab coordinators and research assistants in the comprehensive data collection process, ensuring quality control in data collection and analysis.

- Provided training to 12 students in sophisticated mixture modeling techniques including latent class analysis, latent profile analysis, and latent transition analysis, to enhance research methodologies in education.

Graduate Research Assistant (September 2016 – Present)

Latent Variable Group (PI: Karen Nylund-Gibson), UCSB, Santa Barbara, CA

<https://lvguceb.weebly.com>

- Designed and executed statistical models with R and Mplus, focusing on data modeling for accuracy and data transformation for analysis readiness, aiding in institutional projects.
- Conducted Monte Carlo simulations with datasets reaching nearly 2,000,000 rows, innovated automation tools in R to enhance model accuracy, efficiency, and data visualization.
- Streamlined Monte Carlo simulation processes by developing optimized R code, reducing runtime from one month to one week, accelerating project timelines and optimizing resource allocation.
- Spearheaded data storytelling and data presentation/communication for projects utilizing statistical techniques to develop predictive models, resulting in 4 national conference presentations and one significant publication, enhancing our group's reputation.
- Provided expert statistical consultation, incorporating data quality assurance and troubleshooting, guiding multidisciplinary projects, impacting project success through assessment and evaluation.

Graduate Research Assistant (August 2023 – Present)

Mixture Modeling Training for Discipline-Based Education Researchers Grant (PI: Karen Nylund-Gibson), UCSB, Santa Barbara, CA

<https://mm4dbers.education.ucsb.edu>

- Played a key role in grant-funded projects by providing advanced statistical support through office hours, to support institutional research activities.
- Facilitated training for academics to enhance their understanding of research methodologies, particularly mixture modeling, through workshops and exercises, to assess and improve instruction and learning.
- Drafted comprehensive reports and presentations, utilizing data visualization techniques to clearly convey project outcomes and progress, ensuring effective dissemination of information to stakeholders.
- Responsible for ensuring data integrity through the maintenance of R code, Markdown files, and data visualization tools, contributing to the development of data systems.

Graduate Research Assistant (August 2019 – June 2021)

Project Covitality (PI: Michael J. Furlong), UCSB, Santa Barbara, CA

- As the lead analyst, collaborated on 5 publications and 2 national conference presentations to support institutional research.
- Advised the team on advanced statistical modeling, syntax building, model evaluation, parameter estimation, psychometrics, scale evaluation, and invariance testing, on statistical methodology for project design and metric tracking.
- Handled data management and data querying for a large dataset (100K+ participants), performing data transformation for database maintenance and database design.
- Engaged in data visualization for the creation of visual representations and detailed reports, ensuring data quality in analyses.

Graduate Research Assistant (August 2016 – June 2019)

Sharkey Laboratory (PI: Jill Sharkey), UCSB, Santa Barbara, CA

- Led the execution of 4 formative program evaluations in collaboration with Santa Barbara County Probation, demonstrating expertise in educational evaluation by assessing program efficacy and recommending improvements based on data-driven insights.

- Served as project manager for three programs, overseeing the entire evaluation process from design to final report, showcasing leadership in applied educational research and the ability to manage complex projects.
- Managed and analyzed complex data sets using advanced statistical techniques, contributing to the development of data-driven decision-making in educational contexts. This involved data transformation, quality assurance, and outcome reporting to ensure the integrity and utility of the data for program evaluations.
- Developed comprehensive reports and presented program outcomes across four evaluations, enhancing the visibility and impact of educational research through effective data visualization and communication.

Lab Statistics Coordinator (August 2015 – June 2016)

Graduate Research Assistant (June 2014 – July 2015)

Behavioral Medicine Laboratory (PI: Luciana Laganá), CSUN, Northridge, CA

- Led a team of 10 research assistants, guiding them through data collection, entry, and analysis, showcasing early leadership in research management.
- Provided training in SPSS and EQS, enhancing lab members' capabilities in statistical analysis for educational research.
- Co-authored a publication, offering mentorship on advanced statistics for dissertations and theses, demonstrating my commitment to research excellence and education.

Statistics Consultant (July 2015 – June 2016)

Psychometrics, Research, and Evaluation Promoting Adaptation, Resiliency, and Education (PREPARE) Lab (PI: Scott Plunkett), CSUN, Northridge, CA

- Co-authored a publication, adding to the body of educational research.
- Offered expert consultation in advanced statistical methods like path analyses and Structural Equation Modeling (SEM), enhancing the lab's research capabilities.
- Mentored students on crafting effective conference presentations, fostering skills in research communication.

Graduate Research Assistant (July 2015 – June 2016)

Applied Psychometric Laboratory (PI: Andrew Ainsworth), CSUN, Northridge, CA

- Collaborated with a team of 5 research assistants, contributing to experimental design and data analysis in educational psychology, demonstrating teamwork in research settings.

TEACHING EXPERIENCE

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

Teaching Associate (Instructor of Record)

- PSYCH 120L: Lab in Advanced Research (Winter 2026, $n = 60$)
- PSYCH 120L: Lab in Advanced Research (Summer 2024, $n = 40$)
- PSYCH 105: Developmental Psychology (Summer 2020, $n = 80$) - **Online**

Teaching Assistant – Graduate Courses

- ED 216F: Structural Equation Modeling (Winter 2024, Spring 2019, Spring 2018, $n = 30$ per session)
- ED 216B: Factor Analysis (Fall 2023, Winter 2019, Winter 2018, $n = 20-30$ per session)
- ED 216A: Multivariate Statistics (Fall 2019, Fall 2018, Fall 2016, $n = 20-25$ per session)

Guest Lectures – Graduate Courses

- Factor Analysis (6 occasions)
- Ordinal Latent Class Analysis (1 occasion)

Teaching Assistant – Undergraduate Courses

- PSYCH 120L: Lab in Advanced Research (Multiple sessions from Spring 2023 to Winter 2019, $n = 20$ per session)
- PSYCH 148: Self and Identity (Summer 2022, $n = 40$)
- INT 95C: The Second Year Experience (Summer 2021, $n = 30$)

- SOC 1: Introduction to Sociology (Spring 2021, $n = 100$) - **Online**
- PSYCH 10B: Statistics (Fall 2018, $n = 20$)

Graduate Level Stats Tutor (Winter 2018, Fall 2022, Winter 2023, Spring 2023, Fall 2024, Spring, 2024)
Gevirtz Graduate School of Education, UCSB, Santa Barbara, CA

- Provided statistics tutoring to master, doctorate students, and faculty, enhancing their quantitative research capabilities.

Technology Teaching Assistant (Fall & Winter 2021)

Department of German & Slavic Studies, UCSB, Santa Barbara, CA

- Assisted faculty with remote technology integration in teaching for enhanced multimedia delivery.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

Teaching Associate (Instructor of Record)

- PSY 320L: Statistical Methods for Psychological Research (Spring 2016, Fall 2015, $n = 20$ per session)

Teaching Assistant – Graduate Level Courses

- PSY 524: Multivariate Statistics (Fall 2016, Fall 2015, $n = 20$ per session)
- PSY 485: Advanced Univariate Statistics (Fall 2013, $n = 20$)

Teaching Assistantships – Undergraduate Level Courses

- PSY 320L: Methods for Psychological Research (Spring 2015, $n = 20$)
- PSY 365: Introduction to Gerontology (Fall 2015, $n = 200$)
- PSY 321: Research Methods for Psychology (Spring 2014, $n = 25$)

Statistics and Writing Tutor (Fall 2015, Spring 2016)

College of Social and Behavioral Science, CSUN, Northridge, CA

- Provided tutoring in statistics and writing, supporting students across multiple departments.

SERVICE

PROFESSIONAL AFFILIATIONS

- **National Council on Measurement in Education (2016-present)**
 - **Chair, Graduate Student Issues Committee (2020):** Led efforts to improve educational research by addressing graduate student issues with data-driven solutions.
 - **Graduate Student Issues Committee (2018, 2019):** Contributed to discussions and initiatives aimed at improving educational practices through better support for graduate researchers.
 - **Conference submission reviewer (2018):** Evaluated research submissions, ensuring high-quality, data-driven educational research is presented at conferences.
- **American Educational Research Association (2016 - present)**
 - **Chair, Model contemplations:** Identification, detection, effects, and errors, SIG-educational statisticians (2019, April): Organized discussions on statistical modeling in education, contributing to the development of more accurate and impactful data analysis techniques for educational settings.
 - Affiliated with Structural Equation Modeling SIG and Educational Statisticians SIG.

CAMPUS SERVICE – UCSB

- **Vice President of Communications, Graduate Student Association in Education (2018):** Focused on improving communication within the educational community, facilitating the dissemination of research findings and fostering a data-informed educational environment.

- **Information Technology Group Committee (2018 - present):** Engaged in enhancing the use of technology in education, contributing to campus-wide initiatives that support data-driven decision-making in academic settings.
- **Peer Advisor, Quantitative Methods in the Social Sciences Emphasis (2016 – present):** Provided guidance on quantitative methods, helping to integrate data science into the educational curriculum, particularly supporting students from diverse backgrounds.

COMMUNITY OUTREACH

- **100+ presentations on overcoming addiction to clients in treatment centers, halfway houses, and inpatient and outpatient facilities (2001 – present):** Delivered educational talks that use insights from research to improve community well-being.

PROFESSIONAL DEVELOPMENT

- **Data Carpentry, University of California, Santa Barbara**
 - **Introduction to Python** (October 19-22, 2021)
 - *Four-day hands-on workshop covering Python syntax, data visualization, and Jupyter Notebooks for research applications.*
- **Methods University Stats Camp**
 - **Mediation and Moderation** (June 17-18, 2019)
 - *Explored statistical mediation and moderation techniques using SPSS and PROCESS, focusing on applications in psychological and behavioral research.*
 - **Introduction to Latent Class Analysis** (June 18-19, 2019)
 - *Covered foundational latent class analysis (LCA) techniques, including model estimation, interpretation, and applications in social sciences.*
 - **Introduction to Latent Transition Analysis** (June 20, 2019)
 - *Provided an overview of latent transition analysis (LTA), emphasizing longitudinal modeling, transition probabilities, and real-world applications.*

SKILLS

- **Languages:** English (Native), Spanish (intermediate listener and conversational speaker)
- **Statistics:**
 - **Mplus:** Advanced proficiency in structural equation modeling and mixture modeling.
 - **R/RStudio:** Expert in data analysis, visualization, and automation; special focus on integrating AI for enhanced R coding.
 - **EQS, STATA, SPSS:** Proficient in various statistical software for comprehensive data analysis.
- **Research:** Eprime, Qualtrics, ArcGIS
- **Course Management:** Proficient in Canvas and Moodle, with adaptability to platforms like Brightspace/D2L
- **Productivity:** Microsoft Office (Excel, PowerPoint, Word)

HONORS

UCSB

- Alumni Fellowship in Education for Teaching & Mentoring (2023)
- Alumni Fellowship in Education for Teaching & Mentoring (2020)
- Graduate Student Association Excellence in Teaching Honorable Mention (2019)
- Graduate Student Association Excellence Nomination (2018, 2020)
- Gevirtz Graduate School of Education Fellowships (5 Times) (2018-2022)

- Gevirtz Graduate School of Education Two Year Full Fellowship (2016)
- Gevirtz Graduate School of Education Alumni Fellowship Award (2016)

CSUN

- James R Simpson Merit Scholarship (2012)
- Dean's List, (every semester)