

# Delwin Carter, Ph.D.

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## EDUCATION

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### 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

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### 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., Gavrilova, 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). *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.,** & 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)

Longitudinal Mixture Modeling Research Laboratory, 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://lvgucsb.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 (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 = 13-20 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.

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#### PROFESSIONAL DEVELOPMENT

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- **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 Class Analysis** (June 20, 2019)
    - *Provided an overview of latent transition analysis (LTA), emphasizing longitudinal modeling, transition probabilities, and real-world applications.*

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#### SKILLS

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- **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)

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#### HONORS

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##### 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)