

KAITLYN G. FITZGERALD

February 2026

Department of Mathematics & Statistics
Villanova University

Kaitlyn.fitzgerald@villanova.edu
katie-fitzgerald.netlify.app

APPOINTMENTS

- 2025 - **Assistant Professor**, Department of Mathematics & Statistics,
Villanova University, Villanova, PA
- 2021 – 2025 **Assistant Professor**, Department of Mathematics, Physics, & Statistics,
Azusa Pacific University, Azusa, CA

EDUCATION

- 2021 **Ph.D. Statistics**, Northwestern University, Evanston, IL
Dissertation: *Methods for Synthesizing and Translating Statistical Evidence in Education*
Committee: Elizabeth Tipton (*chair*), Larry Hedges, Steven Franconeri
Certificate in Teaching, Searle Center for Advancing Learning & Teaching
- 2018 **M.S. Statistics**, Northwestern University, Evanston, IL
- 2015 **B.S. Mathematics**, Olivet Nazarene University, Bourbonnais, IL
Summa cum laude, University Honors Program Graduate

FELLOWSHIPS, HONORS & AWARDS

- 2023 Dex Whittinghill III Award for the Best Contributed Paper on Statistics and
Data Science Education, Mathematical Association of America, MathFest
- 2023 – 2024 Faculty Fellow, Jr. Faculty Mentoring Program, Azusa Pacific University
- 2022 – 2023 Project NExT Fellow, Mathematical Association of America
- 2021 Young Alumni Award, Olivet Nazarene University
- 2020 – 2021; University Fellowship, Northwestern University
- 2016 – 2017
- 2017 – 2020 Multi-disciplinary Program in Education Sciences (MPES) Fellowship,
U.S. Department of Education, Institute of Education Sciences.

TEACHING

Villanova University, Department of Mathematics & Statistics

2025 - Courses taught:

- STAT 4380: Data Science (S26)
- STAT 5700: Probability (F25, S26)
- STAT 7500: Statistical Programming (F25)

Azusa Pacific University, Department of Mathematics, Physics, & Statistics

2021 - 2025 Courses taught:

- MATH 130: Introduction to Statistics (F21, S22, F22, S23, F23, F24, S25)
- MATH 250: Data Analysis (F22, F23, F24)
- MATH 350: Statistical Models (S24)
- MATH 361: Probability & Statistics I (F21, S22, S23, S24, S25)
- MATH 362: Mathematical Statistics (F22)
- PRMA 130: Introduction to Statistics (F21, F23)
- STAT 511: Applied Regression Analysis (S22, S23)
- STAT 551: Data Visualization (S24, S25)

Northwestern University

2018 – 2020 **Instructor & Course Designer**, Northwestern Prison Education Program, Cook County Department of Corrections

Introduction to Social Statistics and Data Literacy (*Summer 2019*)

Curriculum Development Graduate Assistant, Department of Statistics

STAT 202: Introduction to Statistics (*Summer, Fall 2019*)

Coordinated Learning Team (CLT) Instructor, Department of Athletics

MATH 220: Differential Calculus of One Variable Functions (*Winter 2019*)

PSYCH 201: Statistical Methods in Psychology (*Summer 2019*)

STAT 202: Introduction to Statistics (*Winter, Spring, Summer 2019*)

Teaching Assistant, Department of Statistics

STAT 202: Introduction to Statistics (*Fall 2019*)

STAT 330: Applied Statistics for Research (*Fall 2018*)

GRANT FUNDING

External Grants

2024 - 2027 **Co-Principal Investigator**, Developing and evaluating tools for communicating statistical evidence to education decision-makers. Institute of Education Sciences, with Elizabeth Tipton (PI, Northwestern University) and Alexander Kale (Co-PI, University of Chicago). Award Number: R305D240023. Funding: \$899,973.

2023 – 2025 **Co-Principal Investigator**, HSI Pilot Project: Impact of Learning Assistants on STEM Identity for Students Historically Underrepresented in STEM. National

Science Foundation, with Bradley McCoy (PI) and Elijah Roth (Co-PI). Award Number: 2247670. Funding: \$199,991.

Internal Grants

- 2025 Faculty Research & Development Grant, Villanova University, College of Liberal Arts & Sciences. Travel to present research at International Conference on Teaching Statistics. Funding: \$3,500.
- 2024 **Co-Principal Investigator**, NSF IUSE HSI Planning Grant: Impact of Learning Assistants on STEM Identity for Students Historically Underrepresented in STEM. Faculty Research Council Planning Grant, Azusa Pacific University, with Bradley McCoy (PI) and Elijah Roth (Co-PI). Funding: \$3,687.
- 2023 – 2024 **Principal Investigator**, Statistical cognition and visualization of meta-analytic data for education research. Faculty Research Council Grant, Azusa Pacific University. Funding: \$6,000.

PUBLICATIONS

- 2025 **Fitzgerald, K.G.**, *Khella, D., *Charles, A., & Tipton, E. Meta-Analytic Rain Cloud Plots: Improving Evidence Communication Through Data Visualization Design Principles. *Research Synthesis Methods*. <https://doi.org/10.1017/rsm.2025.4>
- 2024 **Fitzgerald, K.G.** & Tipton, E. Using Extant Data to Improve Estimation of the Standardized Mean Difference. *Journal of Educational and Behavioral Statistics*. <https://doi.org/10.3102/10769986241238478>
- 2023 **Fitzgerald, K.G.**, & Tipton, E. A knowledge mobilization framework: Towards more evidence-based statistical communication practices in education research. *Journal for Research on Educational Effectiveness*. <https://doi.org/10.1080/19345747.2023.2209082>
- 2022 **Fitzgerald, K.G.**, & Tipton, E. The Meta-Analytic Rain Cloud Plot: A New Approach to Visualizing Clearinghouse Data. *Journal for Research on Educational Effectiveness*, 15:4, 848-875
- 2021 Schauer, J.M., **Fitzgerald, K.G.**, Peko-Spicer, S., Whalen, M.C.R., Zejnullahi, R., & Hedges, L.V. An evaluation of statistical methods for aggregate patterns of replication failure. *Annals of Applied Statistics*, 15(1), 208-229.

* denotes student co-author

- 2020 Tipton, E., Spybrook, J., **Fitzgerald, K.G.**, Wang, Q., Davidson, C. Towards a System of Evidence for All: Current Practices and Future Opportunities in 37 Randomized Trials. *Educational Researcher*, 50(3), 145 – 156.
- 2019 Miller, J.D., **Fitzgerald, K.G.**, Smith, A.L., & Young, S.L. Geophagy among a cohort of Kenyan women with mixed HIV status: a longitudinal analysis. *American Journal of Tropical Medicine & Hygiene*, 101(3), 654 – 660.

OPEN EDUCATIONAL RESOURCES DEVELOPED

- 2026 **Fitzgerald, K.G.**, *Gurrola, J., *Hsieh, J., & *Tran, T. What's the prime age of an MLB baseball player? [SCORE Module](#), peer reviewed.
- 2019 Ismay, C., Kim, A.Y., Kuyper, A.M., Tipton, E. & **Fitzgerald, K.G.**. Introduction to Statistics and Data Science: A modern dive into R and the tidyverse. <https://nustat.github.io/intro-stat-ds/>

WORKING PAPERS

- 2026 **Fitzgerald, K.G.**, *Gurrola, J., *Hsieh, J., & *Tran, T. [SCORE Module](#): Volleyball NCAA Division I. Conditional acceptance.
- 2026 **Fitzgerald, K.G.**, Roth, E., McCoy, B., *Knee, E., *Walker, C., *Knee, K. Learning Assistants as a pedagogical model to improve teaching practices and student outcomes in post-secondary statistics classrooms. Under Review.
- 2026 Arvidson, M., Conner, Z., Friedman, J. & **Fitzgerald, K.G.**. Attitudes and Beliefs of Pre-service Teachers of Elementary Mathematics. Under Review.

PRESENTATIONS

Conference Presentations (Refereed)

- 2025 **Fitzgerald, K.G.**, *Knee, E., *Walker, C., *Dupont, K., Roth, E., McCoy, B. Learning Assistants: A useful model of student support and curricular change in statistics classrooms. Poster presentation at the United States Conference on Teaching Statistics, Ames, IA, July 2025.
- 2024 **Fitzgerald, K.G.**, Glebova, O., & Ebeling, A. Inquiry Based Learning / POGIL Activities for Teaching Bayesian Statistics. Oral presentation at the Joint Statistical Meetings, Portland, OR, August 2024.

- 2024 **Fitzgerald, K.G.** & Tipton, E. Synthesis of sample variance estimates to improve estimation of the standardized mean difference. Oral presentation at Society for Research Synthesis Methods annual meeting, Amsterdam, Netherlands, June 2024.
- 2023 **Fitzgerald, K.G.** & Tipton, E. Knowledge Mobilization & Evidence-Based Statistical Communication Practices. Oral presentation at Women in Statistics & Data Science annual conference, Bellevue, WA, October 2023.
- 2023 **Fitzgerald, K.G.** & Tipton, E. A knowledge mobilization framework: Towards more evidence-based statistical communication practices in education research. Oral presentation at Society for Research on Educational Effectiveness (SREE) annual conference, Arlington, VA, September 2023.
- 2023 **Fitzgerald, K.G.** Data visualization activities to illuminate cognitive pitfalls and help students become better communicators of data. Oral presentation at MathFest, Tampa, FL, August 2023. *Won Dex Whittinghill III Award for the Best Contributed Paper on Statistics and Data Science Education.*
- 2022 **Fitzgerald, K.G.** & Tipton, E. The Meta-Analytic Rain Cloud Plot: A New Approach to Visualizing Clearinghouse Data. Paper presentation at Society for Research Synthesis Methodology Annual Meeting, Portland, OR, July 2022.
- 2022 **Fitzgerald, K.G.** Data visualization tips and tricks: Teaching and learning how to be better communicators of data. Oral presentation at Association of Christians in the Mathematical Sciences bi-annual conference, Azusa Pacific University, June 2022.
- 2021 **Fitzgerald, K.G.** & Tipton, E. Communicating clearinghouse data: A statistical cognition experiment on education practitioners' understanding of forest plots. Paper presentation at the Society for Research on Educational Effectiveness (SREE) annual conference, virtual, September 2021.
- 2020 **Fitzgerald, K.** Adjusting standard deviations for homogeneity of samples. Poster presentation at the Society for Research on Educational Effectiveness (SREE) annual conference, March 2020. (Cancelled due to COVID-19).
- 2019 **Fitzgerald, K.** What are we 95% confident about anyway? A software-embedded curriculum for learning statistical inference. Presentation at Association of Christians in the Mathematical Sciences bi-annual conference, Indiana Wesleyan University, May 2019.

Invited Talks, Panels, & Lectures (External)

- 2026 **Fitzgerald, K.G.**, Data Visualization for Social Impact: Becoming Good Stewards of Information. Invited keynote, Harvey Mudd College, Data Science for Social Impact Datathon.
- 2024 Gould, R., **Fitzgerald, K.** Flores, A., & Jaynes, J. What's next at four-year institutions? Invited panelist, Electronic Conference on Teaching Statistics, University of California Irvine, June 2024.
- 2024 **Fitzgerald, K.G.** Knowledge mobilization and evidence communication: lessons learned. Invited talk, HEDCO Institute for Evidence-Based Educational Practice, University of Oregon, February 2024.
- 2024 **Fitzgerald, K.G.** Data visualization for meta-analysis. Invited lecture, Northwestern University, STAT 439: Meta-analysis, February 2024.
- 2023 **Fitzgerald, K.G.** Knowledge mobilization and lessons for communicating meta-analytic results. Invited talk, American Educational Research Association (AERA) Systematic Review & Meta-Analysis Special Interest Group (SRMA SIG), December 2023.
- 2021 **Fitzgerald, K.** Young Alumni Award Recipient Address, Presidential Prayer Breakfast, Olivet Nazarene University, October 2021.
- 2021 **Fitzgerald, K.G.** How statistics helps us be better stewards of information: Applications from social policy & global development. Invited talk, Olivet Nazarene University, Department of Mathematics, October 2021.
- 2020 Hill, A., Kolak, M., **Fitzgerald, K.** InspiRing InstRuction: A panel on teaching #rstats for all audiences. Invited panelist, R-Ladies Chicago event, November 2020.
- 2018 **Fitzgerald, K.** Statistics for Social Good: Why your math degree is in demand in social policy and international development. Invited talk, Olivet Nazarene University, Department of Mathematics, October 2018.

Internal / Other Presentations

- 2024 **Fitzgerald, K.G.** Workshop on Culturally Responsive Pedagogy. Department of Computer Science, Engineering, Mathematics, Physics, & Statistics, Azusa Pacific University, November 2024.
- 2024 **Fitzgerald, K.G.** Data visualization activities to illuminate cognitive pitfalls and enhance students' data communication. Invited talk, Azusa Pacific University, College of Liberal Arts & Sciences Scholarship Jubilee, April 2024.

2023	Fitzgerald, K.G. Data visualizations, optical illusions, and the curse of expertise. Azusa Pacific University, Department of Mathematics, Physics, & Statistics research seminar, November, 2023.
2021	Fitzgerald, K.G. Effective communication of meta-analytic data in education: Evidence from a statistical cognition experiment on data visualizations. Poster presentation at STEM Research Symposium, Azusa Pacific University, October 2021.

MENTORING & ADVISING

2025	Co-MaStER Research Mentor , Villanova University <i>Fall – Spring 2026 (2 undergraduates + 1 graduate student):</i> Designing & Implementing Randomized Survey Experiments to Evaluate Data Visualizations
2022 – 2025	Undergraduate Research Mentor , Azusa Pacific University (APU) <i>Spring – Summer 2025 (2 students):</i> Developing and evaluating tools for communicating statistical evidence to education decision-makers. <i>Summer 2024, 2025 (2 students):</i> Impact of Learning Assistants on STEM Identity for Students Historically Underrepresented in STEM. <ul style="list-style-type: none">Poster presentation by Evan Knee & Caylee Walker, APU STEM Research Symposium, September 2024.Poster presentation by Evan Knee & Caylee Walker, MAA SoCal Section Meeting, March 2025. <i>Summer 2024, 2025 (6 students):</i> Sports Content for Outreach, Research, and Education (SCORE) in data science. <ul style="list-style-type: none">Two poster presentations by Joseph Hsieh & Jazmine Gurrola at APU STEM Research Symposium, September 2024Two poster presentations by Joseph Hsieh[†] & Jazmine Gurrola[†] at Annual Biomedical Conference for Minoritized Students (ABRCMS), Pittsburgh, PA, November 2024.Two poster presentations by Grace Nguyen & Madey Sule at Annual Biomedical Conference for Minoritized Students (ABRCMS), San Antonio, TX, November 2025. <i>Summer – Fall 2023 Project (2 students):</i> Statistical cognition and visualization of meta-analytic data for education research.

[†] Student received competitive external travel award to present

- Oral presentation by David Khella[†] at Joint Statistical Meetings, Portland, OR, August 2024.
- Panel presentation by Avery Charles at APU Board of Trustees Dinner, November 2023.
- Poster presentation by Avery Charles & David Khella at APU STEM Research Symposium, September 2023.
- Poster presentation by Avery Charles & David Khella at the Electronic Undergraduate Statistics Research annual conference, Consortium for Undergraduate Statistics Education, November 2023.

Fall 2022 – Spring 2023 Project (2 students): APU STEM Retention & Student Performance.

- Poster presentation by Alex dePillis-Lindheim and Emily Gottry at Mathematical Association of America SoCal-Nev Section Meeting, University of La Verne, April 2023.
- Oral presentation by Alex dePillis-Lindheim and Emily Gottry to APU stakeholders (faculty & dean), December 2022.
- Poster presentation by Alex dePillis-Lindheim and Emily Gottry at The Undergraduate Student Project Competition, Consortium for Undergraduate Statistics Education, November 2022.

2021 – 2025	Learning Assistant Mentor , Azusa Pacific University Introduction to Statistics (6 LAs; F21, F22, S23, F23, F24) Introduction to Modeling with Probability (2 LAs; S24, S25)
2023 – 2024	Capstone Thesis Advisor , Valor Christian High School. Topic: Meta-analysis of effectiveness of fetal endoscopic tracheal occlusion in treating severe and moderate cognitive diaphragmatic hernias.
2020 – 2021	Graduate Teaching Mentor , Teaching Certificate Program, Northwestern University Searle Center for Advancing Learning and Teaching
2019 – 2020	AP Research Expert Advisor , James B. Conant High School

RESEARCH & CONSULTING

2024 – 2025	Project Lead , Sports Content for Outreach, Research, and Education in data science, Azusa Pacific University hub. Sub-contract of NSF grant number 2142705 awarded to Carnegie Mellon University and Baylor University.
2019 – 2021	Lab member , Statistics for Evidence-Based Policy and Practice (STEPP) Center, Northwestern University

2019	Graduate Assistant , Meta-Analysis Training Institute, Loyola University
2018 – 2019	Consultant / Facilitator , IES Summer Training Institute: Cluster Randomized Trials, Northwestern University
2018 – 2019	Statistical Consultant , Young Research Group, Northwestern University
2017 – 2021	Graduate Research Assistant , Institute for Policy Research, Northwestern University
2015 – 2016	Research Analyst , Barna Group, Ventura, CA

LEADERSHIP & SERVICE

Departmental Leadership & Service

2025 -	UNITAS: Inclusive Education Committee , Villanova
2025 -	DataFest Philly Committee , Villanova
2025 -	Center for Statistics and Data Science Education Committee , Villanova
2025 -	Applied Statistics and Data Sciences Graduate Committee , Villanova
2025 – 2026	Statistics Retreat Committee , Villanova
2025 - 2026	Search Committee , Continuing non-tenure track positions in Mathematics & Statistics, Villanova
2024 - 2025	Curriculum Working Group, Mathematics Coordinator , APU
2022 - 2025	Data Science Minor Coordinator , Azusa Pacific University
2021 - 2025	Introduction to Statistics Coordinator , Azusa Pacific University
2022 – 2023	Math & Physics Fellowship Task Force , Azusa Pacific University
2022 – 2023	Recruitment Task Force , Azusa Pacific University
2019 – 2020	Speaker Series Coordinator , STEPP Center, Northwestern University

University Leadership & Service

2026	Falvey Data Visualization Competition, Judge , Villanova University
2024 – 2025	Diversity Council , Azusa Pacific University
2024 – 2025	General Education Council , Azusa Pacific University
2024	General Education Course Development Team , Azusa Pacific University
2023 – 2024	GE Course (Re-)Development Fellowship on Culturally Responsive Pedagogy , Azusa Pacific University
2023	Invited panelist , Board of Trustees Dinner on R2 status and faculty research, Azusa Pacific University, October 2023
2022 – 2023	General Education Assessment Committee , Azusa Pacific University
2022 – 2023	Faculty Learning Community: Faith Integration & Race/Ethnicity , Azusa Pacific University

Referee service

- Journals: *British Journal of Educational Psychology*
Association of Christians in the Mathematical Sciences, Conference proceedings
International Conference on Teaching Statistics, Conference proceedings
Journal of Research on Educational Effectiveness
Journal of Statistics and Data Science Education
Learning and Instruction
Problems, Resources, and Issues in Mathematics Undergraduate Studies
- Conferences: *Annual Biomedical Research Conference for Minoritized Students*
Association of Christians in the Mathematical Sciences
Research Methods Section, Society for Research on Educational Effectiveness
- Funders: *National Science Foundation, ECR*
- Other: *SCORE Network (Sports Content for Outreach, Research, and Education for data science)*
Advising on and Making Education Policy: New Perspectives on Past and Present Procedures (book chapter)

Volunteer judging & consulting

- 2026 **Judge**, CAUSE Data Scrollytelling Competition
- 2024 - 2025 **Judge**, Annual Biomedical Research Conference for Minoritized Students
- 2023 **Judge**, Association of Christian Schools International (ACSI) virtual middle school science fair
- 2022 - 2024 **Judge**, STEM Research Symposium, Azusa Pacific University
- 2022, 2023, 2025 **Judge**, Undergraduate Student Project Competition (USPROC), Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) & The American Statistical Association (ASA)
- 2018 **Volunteer Statistical Consultant**, First Presbyterian Church of Evanston

Other Service to the Profession

- 2025 - ASA Section for Statistics and Data Science Education Mentoring Committee

Professional Society Membership

- American Statistical Association (ASA)
Association of Christians in the Mathematical Sciences (ACMS)
Mathematical Association of America (MAA)
Society for Research on Educational Effectiveness (SREE)
Society for Research Synthesis Methodology (SRSM)

Community Leadership & Service

- 2023 – 2025 **Usher & Greeter**, Church of the Resurrection Los Angeles
- 2022 – 2025 **Homeless Count Volunteer**, Los Angeles Homeless Services Authority
- 2020 – 2021 **Correspondence Tutor**, Northwestern Prison Education Program

2018 – 2020	Small Group Leader , NU Graduate Christian Fellowship
2017 – 2019	Small Group Coordinator , NU Graduate Christian Fellowship
2019	Stewardship Task Force , First Presbyterian Church of Evanston
2018	Panelist , InterVarsity Ethnic Reconciliation and Justice National Consultation, University of Chicago, May 2018