

# KAITLYN G. FITZGERALD

September 2024

Department of Computer Science, Engineering, Mathematics, Physics, & Statistics  
Azusa Pacific University  
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## APPOINTMENTS

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2021 – **Assistant Professor**, Department of Computer Science, Engineering,  
Mathematics, Physics, & Statistics, Azusa Pacific University, Azusa, CA

## EDUCATION

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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

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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;  
2016 – 2017 University Fellowship, Northwestern University

2017 – 2020 Multi-disciplinary Program in Education Sciences (MPES) Fellowship,  
U.S. Department of Education, Institute of Education Sciences.

2015 Award for Excellence and Meritorious Work in Mathematics,  
Olivet Nazarene University (*top departmental award*)

**TEACHING**

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

2021 - Courses taught:

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

**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**

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*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*

- 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**

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- 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.
- 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.

## WORKING PAPERS AND BOOKS

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- 2024      **Fitzgerald, K.G.**, \*Khella, D., \*Charles, A., & Tipton, E. Meta-Analytic Rain Cloud Plots: Improving Evidence Communication Through Data Visualization Design Principles. Revise and resubmit.
- 2024      **Fitzgerald, K.G.**, \*Gurrola, J., \*Hsieh, J., & \*Tran, T. [SCORE Module](#): What's the prime age of an MLB baseball player? Under review.
- 2024      **Fitzgerald, K.G.**, \*Gurrola, J., \*Hsieh, J., & \*Tran, T. [SCORE Module](#): Volleyball NCAA Division I. Under review.
- 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/>

## PRESENTATIONS

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### Conference Presentations (Refereed)

- 2024      **Fitzgerald, K.G.**, Glebova, O., & Obeling, 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.*

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\* denotes student co-author

- 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. (Canceled 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)***

- 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.** 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**

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- 2022 – **Undergraduate Research Mentor**, Azusa Pacific University (APU)
- Summer 2024 (2 students):* Impact of Learning Assistants on STEM Identity for Students Historically Underrepresented in STEM.
- Poster presentation by Evan Knee & Caylee Walker, APU STEM Research Symposium, September 2024.
- Summer 2024 (3 students):* Sports Content for Outreach, Research, and Education (SCORE) in data science.
- Two poster presentations by Joseph Hsieh & Jazmine Gurrola at APU STEM Research Symposium, September 2024

- Two poster presentations by Joseph Hsieh<sup>†</sup> & Jazmine Gurrola<sup>†</sup> at Annual Biomedical Conference for Minoritized Students (ABRCMS), Pittsburgh, PA, November 2024 (forthcoming).

*Summer – Fall 2023 Project (2 students):* Statistical cognition and visualization of meta-analytic data for education research.

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

2021 –

**Learning Assistant Mentor**, Azusa Pacific University  
Introduction to Statistics (6 LAs; F21, F22, S23, F23, F24)  
Introduction to Modeling with Probability (1 LA; S24)

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

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<sup>†</sup> Student received competitive external travel award to present

## RESEARCH & CONSULTING

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2024 – 2025	<b>Project Lead</b> , 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	<b>Lab member</b> , Statistics for Evidence-Based Policy and Practice (STEPP) Center, Northwestern University
2019	<b>Graduate Assistant</b> , Meta-Analysis Training Institute, Loyola University
2018 – 2019	<b>Consultant / Facilitator</b> , IES Summer Training Institute: Cluster Randomized Trials, Northwestern University
2018 – 2019	<b>Statistical Consultant</b> , Young Research Group, Northwestern University
2017 – 2021	<b>Graduate Research Assistant</b> , Institute for Policy Research, Northwestern University
2015 – 2016	<b>Research Analyst</b> , Barna Group, Ventura, CA

## LEADERSHIP & SERVICE

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### University Leadership & Service

2024 –	<b>Diversity Council</b> , Azusa Pacific University
2024 –	<b>General Education Council</b> , Azusa Pacific University
2024	<b>General Education Course Development Team</b> , Azusa Pacific University
2023 – 2024	<b>GE Course (Re-)Development Fellowship on Culturally Responsive Pedagogy</b> , Azusa Pacific University
2023	<b>Invited panelist</b> , Board of Trustees Dinner on R2 status and faculty research, Azusa Pacific University, October 2023
2022 – 2023	<b>General Education Assessment Committee</b> , Azusa Pacific University
2022 – 2023	<b>Faculty Learning Community: Faith Integration &amp; Race/Ethnicity</b> , Azusa Pacific University

### Departmental Leadership & Service

2024 -	<b>Curriculum Updates Working Group, Mathematics Coordinator</b> , APU
2022 -	<b>Data Science Minor Coordinator</b> , Azusa Pacific University
2021 -	<b>Introduction to Statistics Coordinator</b> , Azusa Pacific University
2022 – 2023	<b>Math &amp; Physics Fellowship Task Force</b> , Azusa Pacific University
2022 – 2023	<b>Recruitment Task Force</b> , Azusa Pacific University
2019 – 2020	<b>Speaker Series Coordinator</b> , STEPP Center, Northwestern University



**Referee service**

Journals: *Journal of the Association of Christians in the Mathematical Sciences*  
*Journal of Research on Educational Effectiveness*  
*Journal of Statistics and Data Science Education*  
*Problems, Resources, and Issues in Mathematics Undergraduate Studies*

Conferences: *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)*  
*Policy Advice and Policy Making in Education: Perspectives on Past and Present Procedures*

**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)

**Volunteer judging & consulting**

2024 **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 **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

**Community Leadership & Service**

2023 – **Usher & Greeter**, Church of the Resurrection Los Angeles

2022 – **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