

Jenna C. Carlson, Ph.D.

Assistant Professor of Human Genetics and Biostatistics

Business Address

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Education and Training

2007 – 2012	B.S. Applied Mathematics, Statistics	California Polytechnic State Univ. San Luis Obispo, CA
2012 – 2017	Ph.D. Biostatistics <i>Mentor: Eleanor Feingold</i>	University of Pittsburgh Pittsburgh, PA
2017 – 2018	Postdoctoral training, Human Genetics <i>Mentors: Ryan L. Minster, Ph.D., M.S.I.S., Daniel E. Weeks, Ph.D.</i>	University of Pittsburgh Pittsburgh, PA

Appointments and Positions

2023 – current	Assistant Professor, Human Genetics	Department of Biostatistics School of Public Health University of Pittsburgh Pittsburgh, PA
2023 – current	Assistant Professor, Biostatistics <i>secondary appointment</i>	Department of Human Genetics School of Public Health University of Pittsburgh Pittsburgh, PA
2022 – 2023	M.S. Program Director	Department of Biostatistics School of Public Health University of Pittsburgh Pittsburgh, PA
2019 – 2023	Assistant Professor, Human Genetics <i>secondary appointment</i>	Department of Human Genetics School of Public Health University of Pittsburgh Pittsburgh, PA
2018 – 2023	Assistant Professor, Biostatistics	Department of Biostatistics School of Public Health University of Pittsburgh Pittsburgh, PA

Membership in Professional and Scientific Societies

2015 – current American Society of Human Genetics
2019 – current American Statistical Association

Honors and Awards

2012 μσρ National Statistics Honorary Society
2012 ΠΜΕ National Mathematics Honorary Society
2013 Student Scholar, Pharmaceutical SAS® User Group
2013 Student Scholar, Western Users of SAS® Software
2013 Student Ambassador Honorable Mention, SAS® Global Forum
2015 Dean's Day Poster Presentation, 2nd place in Biostatistics Department
School of Public Health, University of Pittsburgh
2017 Dean's Day Poster Presentation, 1st place in Biostatistics Department
School of Public Health, University of Pittsburgh

Teaching

Courses

Spring 2017 Teaching Fellow, primary instructor and course designer, *Principles of Statistical Reasoning* (BIOST 2011), 3 credits, 3 hrs/week, 73 enrolled

Fall 2018 Assistant Professor, primary instructor and course designer, *Introduction to Statistical Methods* (BIOST 2041), 3 credits, 3 hrs/week, 159 enrolled

Fall 2018 Assistant Professor, primary instructor and course designer, *Biostatistical Methods* (BIOST 2039), 3 credits, 3 hrs/week, 16 enrolled

Spring 2019 Assistant Professor, primary instructor and course designer, *Principles of Statistical Reasoning* (BIOST 2011), 3 credits, 3 hrs/week, 48 enrolled

Fall 2019 Assistant Professor, primary instructor and course designer, *Introduction to Statistical Methods* (BIOST 2041), 3 credits, 3 hrs/week, 135 enrolled

Fall 2019 Assistant Professor, primary instructor and course designer, *Biostatistical Methods* (BIOST 2039), 3 credits, 3 hrs/week, 9 enrolled

Spring 2020 Assistant Professor, co-instructor (25%), *Capstone* (BIOST 2099), 2 credits, 2 hrs/week, 5 enrolled

Summer 2020 Assistant Professor, co-instructor (25%), *Capstone* (BIOST 2099), 2 credits, 2 hrs/week, 1 enrolled

Fall 2020 Assistant Professor, primary instructor and course designer, *Introduction to Statistical Methods* (BIOST 2041), 3 credits, 3 hrs/week, 178 enrolled

Fall 2020 Assistant Professor, primary instructor and course designer, *Biostatistical Methods* (BIOST 2039), 3 credits, 3 hrs/week, 18 enrolled

Fall 2020 Assistant Professor, co-instructor (25%), *Capstone* (BIOST 2099), 2 credits, 2 hrs/week, 2 enrolled

Spring 2021 Assistant Professor, primary instructor and course designer, *Principles of Statistical Reasoning* (BIOST 2011), 3 credits, 3 hrs/week, 58 enrolled

Spring 2021	Assistant Professor, co-instructor (25%), <i>Capstone</i> (BIOST 2099), 2 credits, 2 hrs/week, 5 enrolled
Spring 2021	Assistant Professor, primary instructor and course designer, <i>Special Studies: Biostatistical Theory Independent Study</i> (BIOST 2021), 3 credits, 3 hrs/week, 1 enrolled
Summer 2021	Assistant Professor, co-instructor (25%), <i>Capstone</i> (BIOST 2099), 2 credits, 2 hrs/week, 1 enrolled
Fall 2021	Assistant Professor, course designer and co-instructor (50%), <i>Introduction to Statistical Methods</i> (BIOST 2041), 3 credits, 3 hrs/week, 214 enrolled
Fall 2021	Assistant Professor, co-instructor (33%), <i>Capstone Preparation</i> (BIOST 2022), 1 credits, 1 hr/week, 13 enrolled
Spring 2022	Assistant Professor, primary instructor and course designer, <i>Principles of Statistical Reasoning</i> (BIOST 2011), 3 credits, 3 hrs/week, 62 enrolled
Spring 2022	Assistant Professor, co-instructor (25%), <i>Capstone</i> (BIOST 2099), 2 credits, 2 hrs/week, 9 enrolled
Spring 2022	Assistant Professor, co-instructor (33%), <i>Capstone Preparation</i> (BIOST 2022), 1 credits, 1 hr/week, 1 enrolled
Summer 2022	Assistant Professor, co-instructor (33%), <i>Capstone Preparation</i> (BIOST 2022), 1 credits, 1 hr/week, 1 enrolled
Fall 2022	Assistant Professor, primary instructor and course designer, <i>Introduction to Statistical Methods</i> (BIOST 2041), 3 credits, 3 hrs/week, 180 enrolled
Fall 2022	Assistant Professor, primary instructor and course designer, <i>Biostatistical Methods</i> (BIOST 2039), 3 credits, 3 hrs/week, 16 enrolled
Fall 2022	Assistant Professor, co-instructor (25%), <i>Capstone</i> (BIOST 2099), 2 credits, 2 hrs/week, 2 enrolled
Fall 2022	Assistant Professor, co-instructor (33%), <i>Capstone Preparation</i> (BIOST 2022), 1 credits, 1 hr/week, 7 enrolled
Spring 2023	Assistant Professor, co-instructor (50%), <i>Capstone</i> (BIOST 2099), 2 credits, 2 hrs/week, 4 enrolled
Fall 2023	Assistant Professor, co-instructor (50%), <i>Genome Bioinformatics Professional Skills</i> (HUGEN 2077), 2 credits, 2 hrs/week, 3 enrolled

Other Teaching

Workshops

Fall 2019	Workshop series creator and co-facilitator, <i>Evidence Based Teaching Practices</i> (8 workshops), School of Public Health, University of Pittsburgh
Summer 2020	Workshop co-creator and co-instructor (50%), <i>Introduction to Critical Appraisal</i> (2-part workshop), Health Sciences Library System, University of Pittsburgh
Summer 2020	Workshop creator and instructor, <i>Introduction to R</i> (2-part workshop), Health Sciences Library System, University of Pittsburgh

Fall 2020 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Fall 2020 Workshop creator and instructor, *Programming with R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Spring 2021 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Spring 2021 Workshop creator and instructor, *Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Spring 2021 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Summer 2021 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Summer 2021 Workshop creator and instructor, *Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Summer 2021 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Fall 2021 Workshop creator and instructor, *Intro to R and Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Fall 2021 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Spring 2022 Workshop creator and instructor, *Intro to R and Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Spring 2022 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Summer 2022 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Summer 2022 Workshop creator and instructor, *Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Summer 2022 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Fall 2022 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Fall 2022 Workshop creator and instructor, *Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Fall 2022 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Spring 2023 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Spring 2023 Workshop creator and instructor, *Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh

- Spring 2023 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh
- Summer 2023 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh
- Summer 2023 Workshop creator and instructor, *Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh
- Summer 2023 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh
- Fall 2023 Workshop creator and instructor, *Introduction to R* (2-part workshop), Health Sciences Library System, University of Pittsburgh
- Fall 2023 Workshop creator and instructor, *Data Wrangling in R* (2-part workshop), Health Sciences Library System, University of Pittsburgh
- Fall 2023 Workshop creator and instructor, *Data Visualization in R with ggplot2* (2-part workshop), Health Sciences Library System, University of Pittsburgh

Guest Lectures

- Spring 2013 Lecture: ODS and ODS Graphics, *SAS Data Management and Analysis* (BIOST 2093), University of Pittsburgh
- Spring 2013 Lecture: Macros, *SAS Data Management and Analysis* (BIOST 2093), University of Pittsburgh
- Fall 2016 Two Lectures: Gene Mapping: Genome-Wide Association Studies, *Human Population Genetics* (HUGEN 2022), University of Pittsburgh
- Fall 2021 Lecture: The importance of data in public health & intro to biostatistics, *Fundamentals of Public Health* (PUBHLT 100), University of Pittsburgh
- Spring 2022 Lecture: The importance of data in public health & intro to biostatistics, *Fundamentals of Public Health* (PUBHLT 100), University of Pittsburgh
- Fall 2022 Lecture: The importance of data in public health & intro to biostatistics, *Fundamentals of Public Health* (PUBHLT 100), University of Pittsburgh
- Spring 2023 Lecture: The importance of data in public health & intro to biostatistics, *Fundamentals of Public Health* (PUBHLT 100), University of Pittsburgh

Teaching Assistantships and Fellowships

- 2011 Teaching Assistant, graded for proof-based math course, *Linear Algebra II* (MATH 306), California Polytechnic State University
- 2012 Teaching Assistant, facilitated lab sessions and graded, *Introduction to Statistical Concepts and Methods* (STAT 217), California Polytechnic State University
- 2012 Teaching Assistant, held office hours, led recitation sessions, and graded, *Principles of Statistical Reasoning* (BIOST 2011), University of Pittsburgh
- 2013 Teaching Assistant, created assignments and graded, *SAS Data Management and Analysis* (BIOST 2093), University of Pittsburgh
- 2017 Teaching Fellowship, created materials and instructed course, *Principles of Statistical Reasoning* (BIOST 2011), University of Pittsburgh

Major Advisor for Graduate Students

- 2018 – 2021 Molly McKune, M.S., Biostatistics, Thesis: “The role of sleep in mediating the relationship between BMI and CVD risk factors in Samoan adults.”
- 2019 – 2021 Gregory Procaro, M.S., Biostatistics, Thesis: “Predicting body composition measurements in Samoan adults with multivariate adaptive regression splines and assessing the effect of a missense variant in *CREBRF* on body composition.”
- 2021 Mark Vater, M.S., Biostatistics with a concentration in Statistical and Computational Genomics, Thesis: “Genetic commonalities in gynecologic cancers using publicly available genome-wide association study summary results: an exploratory meta-analysis.” Co-advised with Jeanine Buchanich, Ph.D.
- 2019 – 2021 Arvon Clemons, II, M.S., Biostatistics with a concentration in Statistical and Computational Genomics, Thesis: “Analysis of VRE Transmission In A Major Hospital Setting Using Hierarchical Clustering and Bayesian Phylodynamic Methods.”
- 2020 – 2022 Dengxiaoyu Shi, M.S., Biostatistics, Thesis: “DNA Methylation Across Primary Motor Cortex at Single-Cell Resolution.”
- 2020 – 2022 Henry Thorpe, M.S., Biostatistics with a concentration in Statistical and Computational Genomics, Thesis: “Multivariate analysis of blood pressure traits in Samoans identifies *UTP25* and *TSNARE1*.”
- 2020 – 2022 Shan Wu, M.S., Biostatistics, Thesis: “Assessing the Impact of Missing Outcome Data on the Longitudinal Clinical Trial During the COVID-19 Pandemic: A Simulation Study for Sensitivity Analysis Using Imputation Methods.” Co-advised with Chaeryon Kang, Ph.D.
- 2021 – 2022 Yufeng Zhu, M.S., Biostatistics, Thesis: “Effect of Social Media on E-cigarette use among Youth during the COVID-19 Pandemic in 2021.”
- 2020 – 2023 Alexis Cenname, M.S., Biostatistics with a concentration in Statistical and Computational Genomics, Thesis: “The association of *VMAT2* gene polymorphisms with the development of schizophrenia.”
- 2021 – 2023 Violet Hecmanczuk, M.S., Biostatistics, Thesis: “Exact regression for small and wide data: analyzing transgender participation in a game-based intervention.”
- 2021 – current Dominika Oliver, M.S. Biostatistics with a concentration in Statistical and Computational Genomics, in progress
- 2021 – current Rachel Witt, M.S., Biostatistics, in progress
- 2022 – current Celester Picone, M.S., Biostatistics with a concentration in Health Data Science, in progress
- 2022 – current Isha Sahasrabudhe, M.S., Biostatistics with a concentration in Statistical and Computational Genomics, in progress
- 2023 – current Madeline Peterson, M.S., Biostatistics, in progress
- 2023 – current Bridget Mayrer, M.S., Biostatistics, in progress

- 2022 – current Mia Alcorn, M.S., Biostatistics, in progress
- 2022 – current Aparna Nigam, M.S., Biostatistics, in progress

Service on Masters and Doctoral Committees

- 2019 Priyanka Setty, M.S., Biostatistics, Thesis: “A comparative analysis to predict p53 activity using classification models.”
- 2019 Kendra Bobby, M.S., Biostatistics, Thesis: “Spatial association between social vulnerability and accidental poisoning mortality in Pennsylvania and its adjacent states.”
- 2019 Kelly Cahill, M.S., Biostatistics, Thesis: “rfTSP: A non-parametric predictive model with order-based feature selection for transcriptomic data.”
- 2019 – 2020 Andrew Fazenbaker, M.S., Genetic Counseling, Thesis: “Epilepsy panel testing criteria: a clinical assessment.”
- 2019 – 2020 Jessica Tiner, M.P.H., Public Health Genetics, Essay: “Utility of *CREBRF* genotype with BMI in prediction of type 2 diabetes.”
- 2020 Kayleigh Adamson, M.S., Biostatistics, Thesis: “A gaussian-mixture model analysis of polydrug use in opioid overdose deaths.”
- 2020 Jennifer Fedor, M.S., Biostatistics, Thesis: “Prediction health-related quality of life in early adulthood from individual difference in adolescent neurocognitive development.”
- 2020 Elijah Lovelace, M.S., Biostatistics, Thesis: “Analysis of post-secondary bound graduation rates in Pennsylvania public schools.”
- 2020 Menqi Wang, M.S., Biostatistics, Thesis: “Evaluating comparative effectiveness of simultaneous liver and kidney versus liver transplant alone using instrumental variables.”
- 2020 Anni Guo, M.S., Biostatistics, Thesis: “Predicting outcome in lost-to-follow-up subjects from a 15-year observational study of autosomal dominant polycystic kidney disease.”
- 2020 Nabil Awan, M.S., Biostatistics, Thesis: “Association of early chronic systemic inflammation with depression at 12 months post-traumatic brain injury and a comparison of prediction models.”
- 2020 Chen’ao Qian, M.S., Biostatistics, Thesis: “Genome-wide association studies in Samoans give insight into obesity by investigating skinfold thickness.”
- 2020 James Dominic DiSanto, M.S., Biostatistics, Thesis: “Treelet Dimension Reduction of Diagnoses Among Intensive Care Unit Admissions.”
- 2021 Jason Kennedy, M.S., Biostatistics, Thesis: “Towards a Learning Health System: Using Reinforcement Learning to Optimize Treatment Decisions in Sepsis Patients.”
- 2021 Ashika Mani, M.S., Biostatistics, Thesis: “Analyzing Deep Learning Techniques in Accelerated Clinical Brain Magnetic Resonance Imaging for Multiple Sclerosis.”

- 2021 Amber Olander, M.P.H., Public Health Genetics, Essay: "Assessing Genetic Associations with Depressive Features and Body Mass Index in Samoans."
- 2021 – 2022 Savannah Binion, M.S., Genetic Counseling, Thesis: "Impact of a pre-counseling educational video on the duration of cancer genetic counseling sessions."
- 2021 – 2022 Phuc Do, M.S., Genetic Counseling, Thesis: "Survey of the Genetic Counselor Perspective Regarding the 2020 ACOG Guideline Update Recommending the Routine Offering of NIPT in All Pregnancies."
- 2021 – 2022 Julia Knapo, M.S., Genetic Counseling, Thesis: "Assessing patient empowerment in caregivers of patients with autism spectrum disorder."
- 2021 – 2022 Megan Zieber, M.P.H., Public Health Genetics, Essay: "Radon exposure levels in Pennsylvania: an investigation of the effects of social determinants on health disparities."
- 2021 – 2022 Catherine Troutman, M.P.H., Public Health Genetics, Essay: "Pseudoxanthoma Elasticum Epidemiological Survey Report."
- 2021 – 2022 Mabeth Diaz, M.H.A., Essay: "Data Integration and Analysis in Healthcare: A Pivot Within the Industry."
- 2021 – 2022 Benjamin Morano, M.H.A., Essay: "Impact of Work from Home Status on Hospital Administrative Staff Engagement."
- 2021 – 2022 Matthew Kravitz, M.H.A., Essay: "Comparative Analysis of the Leading Methods for Optimizing Operating Room Efficiency and Cost Effectiveness."
- 2022 Tucker Harvey, M.S., Biostatistics, Thesis: "Modeling patient satisfaction after APM using KOOS measured with error."
- 2022 Margaret Kuzemchak, M.S., Biostatistics, Thesis: "Causal effect of changes in industrial air pollution on asthma rates in Western Pennsylvania."
- 2022 Jenna Li, M.S., Biostatistics, Thesis: "Time Series Analysis of Unconventional Gas Development in Southwestern PA."
- 2022 Benjamin Minardi, M.S., Biostatistics, Thesis: "Predicting Alcohol Use Behaviors in The United States: A Complex Survey Analysis."
- 2022 Brian O'Connell, M.S., Biostatistics with a concentration in Health Data Science, Thesis: "Machine Learning Analysis of Preterm Birth in Southwestern Pennsylvania."
- 2022 Nina Oryshkewych, M.S., Biostatistics with a concentration in Health Data Science, Thesis: "Prediction of Apgar Score Using Statistical Learning."
- 2022 Sabnum Pudasainy, M.S., Biostatistics with a concentration in Health Data Science, Thesis: "Prediction of Preterm Birth in Southwestern PA Using Classification Models: A Comparative Analysis."
- 2022 Laura Stackhouse, M.S., Human Genetics, Thesis: "CREBRF Missense Variant rs373863828 and Relative Grip Strength."
- 2022 Kevin Anderson, M.S., Genome Bioinformatics, Thesis: "Inclusion of 48 Pacific Islanders Within a Cosmopolitan Reference Panel is Sufficient for High Accuracy Genotype Imputation of Samoans."

- 2022 Elizabeth Chiyka, M.S., Genome Bioinformatics, Thesis: "Evidence Of Genotype Imputation Differences When Phasing Population Isolate Participants with a Cosmopolitan Haplotype Reference Panel."
- 2022 Devin Dikec, M.S., Genome Bioinformatics, Thesis: "Inclusion of Custom Markers Does Not Improve Genotype Imputation Accuracy in a Population Isolate."
- 2022 Nicholas Tedesco, M.S., Biostatistics with a concentration in Health Data Science, Thesis: "Using Bayesian Regression to Investigate the Effects of Fracking Waste on Birthweight."
- 2022 Jordan Driscoll, M.S., Genome Bioinformatics, Thesis: "Comparison of Genome-Wide Association Study Approaches: Meta-Analysis vs Mega-Analysis."
- 2022 – 2023 Samhita Ravi, M.S., Infectious Disease and Microbiology, Thesis: "Outcomes in Patients with Alcoholic Hepatitis May be Affected by When an Infection is Presented."
- 2023 Ruofei Yin, M.S., Biostatistics, Thesis: "Artifact of detecting biomarkers associated with sequence depth in RNA-Seq."
- 2023 Joshua Witten, M.S., Genome Bioinformatics, Thesis: "Comparison of genotype imputation on chromosome 5 in a population isolate using haplotypes phased with and without TOPMed genotypes."
- 2023 Alex Watts, M.S., Biostatistics, Thesis: "Assessing the effects of weather on bike share usage in Philadelphia."
- 2023 – current Elian Buchi, M.S., Genetic Counseling, in progress
- 2023 – current Leann To, M.S., Genetic Counseling, in progress
- 2023 – current Emily Hrach, M.S., Genetic Counseling, in progress
- 2023 – current Grace Waldrow, M.S., Genetic Counseling, in progress
- 2023 – current Kaley Jean, M.P.H., Public Health Genetics, in progress
- 2023 – current Gracen Mitrick, Ph.D., Human Genetics, in progress

Other Mentoring of Graduate Students

- 2017 – 2019 Emily Russell, Ph.D. student in Human Genetics, mentored in graduate student researcher position (supervised by Ryan L. Minster, Ph.D., M.S.I.S.)
- 2018 – 2020 Jerry Zhang, Ph.D. student in Biostatistics, mentored in graduate student researcher position (supervised by Daniel Weeks, Ph.D.)
- 2019 – 2022 Zeynep Erdogan-Yildirim, Ph.D. student in Human Genetics, mentored in graduate student researcher position (supervised by Ryan L. Minster, Ph.D., M.S.I.S.)
- 2019 – 2020 Haoyi Fu, Ph.D. student in Biostatistics, mentored in graduate student researcher position (supervised by Daniel Weeks, Ph.D.)
- 2022 – 2023 Thien Pham, Ph.D. student in Biostatistics, mentored in graduate student researcher position (co-supervised with Amy Wagner, M.D.)

- 2022 – current Dylan Maher, Ph.D. student in Human Genetics, mentored in graduate student researcher position (supervised by John Shaffer, Ph.D.)
- 2022 – current Xinyi Zhang, Ph.D. student in Biostatistics, graduate student researcher under my supervision
- 2022 – current Toni-Ann Yapp, Ph.D. student in Human Genetics, mentor in graduate student research position (co-supervised with Ryan Minster, Ph.D., M.S.I.S.)

Mentoring of Postdoctoral Associates

- 2019 – 2021 Emily Russell, Ph.D., part of postdoctoral mentoring team (supervised by Ryan L. Minster, Ph.D., M.S.I.S.)
- 2019 – 2021 Mohanraj Krishnan, Ph.D., mentored in postdoctoral position (supervised by Ryan L. Minster, Ph.D., M.S.I.S.)
- 2022 – current Zeynep Erdogan-Yildirim, Ph.D., mentored in postdoctoral position (supervised by Mary Marazita, Ph.D.)

Other Mentoring

- 2022 – current Anna Rivara, Ph.D., mentor on K01DK132514 project “The Diabetes Clinical outcomes Associated with Retention and Engagement in Care, in Samoa (Diabetes CARE)”

Service on Comprehensive or Qualifying Examinations

- 2019 M.S. Biostatistics Comprehensive Exam, 21 students
- 2019 Ph.D. Epidemiology Preliminary Exam, 14 students
- 2020 M.S. Biostatistics Comprehensive Exam, 8 students
- 2020 Ph.D. Biostatistics Qualifying Exam, 10 students
- 2020 Ph.D. Epidemiology Preliminary Exam, 13 students
- 2021 M.S. Biostatistics Comprehensive Exam, 14 students
- 2021 Ph.D. Biostatistics Qualifying Exam, 16 students
- 2021 Ph.D. Epidemiology Preliminary Exam, 14 students
- 2022 M.S. Human Genetics Comprehensive Exam, 1 student, Laura Stackhouse
- 2022 M.S. Biostatistics Comprehensive Exam, 9 students
- 2022 Ph.D. Biostatistics Qualifying Exam, 11 students
- 2022 Ph.D. Epidemiology Preliminary Exam, 16 students
- 2023 M.S. Biostatistics Comprehensive Exam, 21 students
- 2023 Ph.D. Epidemiology Preliminary Exam, 17 students

Teaching Development

- 2016 Attended Workshop “Developing a Lesson Plan”, University Center for Teaching and Learning, University of Pittsburgh
- 2016 Attended Workshop “Dealing with Difficult Situations”, University Center for Teaching and Learning, University of Pittsburgh
- 2016 Attended Workshop “Encouraging Student Participation”, University Center for Teaching and Learning, University of Pittsburgh
- 2017 Completed 13-session course “Prep for the STEM Classroom”, Center for the Integration of Research, Teaching, and Learning (CIRTL), University of Pittsburgh

- 2018 Completed 4-session short course “Engaging Students in the Teaching of Statistics”, Center for the Integration of Research, Teaching, and Learning (CIRTL), CIRTL Network
- 2018 Attended 6-session workshop series “Effective Mentoring” based on the National Research Mentoring Network, Center for the Integration of Research, Teaching, and Learning (CIRTL), University of Pittsburgh
- 2018 Attended workshop “Designing Better Test Questions”, University Center for Teaching and Learning, University of Pittsburgh
- 2019 Attended 1-day conference including teaching workshops, Pittsburgh Regional Faculty Symposium, University of Pittsburgh
- 2019 Created and co-facilitated an 8-part workshop series for Pitt Public Health students, postdocs, and faculty called “Evidence-Based Teaching Practices”
- 2019 Attended 3-day conference including several teaching workshops, United States Conference on Teaching Statistics (USCOTS), Consortium for the Advancement of Undergraduate Statistics Education (CAUSE)
- 2019 Attended workshop “Creating and Updating Flipped Classrooms”, American Statistical Association Section on Teaching Statistics in the Health Sciences
- 2019 Attended workshop “Designing Rubrics”, University Center for Teaching and Learning, University of Pittsburgh
- 2019 Participated in 3-sessions of learning community on “Assessments”, Center for the Integration of Research, Teaching, and Learning (CIRTL), University of Pittsburgh
- 2019 Participated in 3-sessions of the “Large Enrollment Faculty Learning Community”, University Center for Teaching and Learning, University of Pittsburgh
- 2019 Attended 1-day conference including teaching workshops, Conference on Teaching and Learning in Higher Education, La Roche University
- 2019 – 2020 Completed 6-part seminar course series “Scholarship of Teaching and Learning”, University Center for Teaching and Learning, University of Pittsburgh
- 2020 Attended workshop “Teaching Statistics with Simulation-Based Inference”, American Statistical Association Section on Statistics and Data Science Education
- 2020 Attended workshop “Out of the Classroom and into the ‘Real’ World: Learning Statistics by Doing Statistics with ‘The Islands’”, American Statistical Association Section on Teaching Statistics in the Health Sciences
- 2020 Attended workshop “Canvas for Remote Instruction”, University Center for Teaching and Learning, University of Pittsburgh
- 2020 Participated in 10-session learning community (creating a template for an online course) called “Online Teaching”, Center for the Integration of Research, Teaching, and Learning (CIRTL), University of Pittsburgh
- 2020 Completed training program “Teaching Online at Pitt (TOP)”, University Center for Teaching and Learning, University of Pittsburgh
- 2021 Completed 4-part seminar course series “Hybrid and Online Teaching”, University Center for Teaching and Learning, University of Pittsburgh

Advancement of Diversity, Equity, and Inclusion

- 2022 Attended workshop “Intercultural Competency”, Faculty and Staff Development Program, University of Pittsburgh
- 2022 Attended workshop “Gender Theory, Gender Diversity, and Trans-Inclusive Spaces”, Faculty and Staff Development Program, University of Pittsburgh
- 2022 Attended workshop “Fostering a Diverse and Inclusive Workspace”, Faculty and Staff Development Program, University of Pittsburgh
- 2022 Attended workshop “Creating Equal Access: Getting Started with Digital Accessibility”, Faculty and Staff Development Program, University of Pittsburgh
- 2022 Attended workshop “Preventing Sexual Misconduct”, Faculty and Staff Development Program, University of Pittsburgh
- 2022 Attended workshop “Microaggression: Recognizing and Challenging a Subtle Form of Bias”, Faculty and Staff Development Program, University of Pittsburgh
- 2023 Attended workshop “Capstone Conversation”, Faculty and Staff Development Program, University of Pittsburgh
- 2023 Completed certificate “Diversity and Inclusion Certificate Program”, Faculty and Staff Development Program, University of Pittsburgh
- 2023 Attended workshop “Supporting Neurodivergent Students”, Center for the Integration of Research, Teaching, and Learning (CIRTL), CIRTL Network

Research

Peer-Reviewed Articles

* equal contribution

† co-authored with graduate student

1. Shaffer JR, **Carlson JC**, Stanley BO, Feingold E, Cooper M, Vanyukov MM, Maher BS, Slayton RL, Willing MC, Reis SE, McNeil DW, Crout RJ, Weyant RJ, Levy SM, Vieira AR, Marazita ML. Effects of enamel matrix genes on dental caries are moderated by fluoride exposures. *Hum Genet.* 2015 Feb;134(2):159-67. doi: 10.1007/s00439-014-1504-7. Epub 2014 Nov 6. PubMed PMID: 25373699; PubMed Central PMCID: PMC4293346.
2. Leslie EJ*, Taub MA*, Liu H, Steinberg KM, Koboldt DC, Zhang Q, **Carlson JC**, Hetmanski JB, Wang H, Larson DE, Fulton RS, Kousa YA, Fakhouri WD, Naji A, Ruczinski I, Begum F, Parker MM, Busch T, Standley J, Rigdon J, Hecht JT, Scott AF, Wehby GL, Christensen K, Czeizel AE, Deleyiannis FW, Schutte BC, Wilson RK, Cornell RA, Lidral AC, Weinstock GM, Beaty TH, Marazita ML, Murray JC. Identification of functional variants for cleft lip with or without cleft palate in or near *PAX7*, *FGFR2*, and *NOG* by targeted sequencing of GWAS loci. *Am J Hum Genet.* 2015 Mar 5;96(3):397-411. doi: 10.1016/j.ajhg.2015.01.004. Epub 2015 Feb 19. PubMed PMID: 25704602; PubMed Central PMCID: PMC4375420.

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Consortium Publications (not named author)

42. Li X, Li Z, Zhou H, Gaynor SM, Liu Y, Chen H, Sun R, Dey R, Arnett DK, Aslibekyan S, Ballantyne CM, Bielak LF, Blangero J, Boerwinkle E, Bowden DW, Broome JG, Conomos MP, Correa A, Cupples LA, Curran JE, Freedman BI, Guo X, Hindy G, Irvin MR, Cardia SLR, Kathiresan S, Khan AT, Kooperberg CL, Laurie CC, Liu XS, Mahaney MC, Manichaikul AW, Martin LW, Mathias RA, McGarvey ST, Mitchell BD, Montasser ME, Moore JE, Morrison AC, O'Connell JR, Palmer ND, Pampana A, Peralta JM, Peyser PA, Psaty BM, Redline S, Rice KM, Rich SS, Smith JA, Tiwari HK, Tsai MY, Vasan RS, Wang FF, Weeks DE, Weng Z, Wilson JG, Yanek LR; NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium; TOPMed Lipids Working Group, Neale BM, Sunyaev SR, Abecasis GR, Rotter JI, Willer CJ, Peloso GM, Natarajan P, Lin X. Dynamic incorporation of multiple in silico functional annotations empowers rare variant association analysis of large whole-genome sequencing studies at scale. *Nat Genet*. 2020 Sep;52(9):969-983. doi: 10.1038/s41588-020-0676-4. Epub 2020 Aug 24. PMID: 32839606; PMCID: PMC7483769

43. Kessler MD, Loesch DP, Perry JA, Heard-Costa NL, Taliun D, Cade BE, Wang H, Daya M, Ziniti J, Datta S, Celedón JC, Soto-Quiros ME, Avila L, Weiss ST, Barnes K, Redline SS, Vasani RS, Johnson AD, Mathias RA, Hernandez R, Wilson JG, Nickerson DA, Abecasis G, Browning SR, Zöllner S, O'Connell JR, Mitchell BD, O'Connor TD. De novo mutations across 1,465 diverse genomes reveal mutational insights and reductions in the Amish founder population. *Proc Natl Acad Sci U S A*. 2020 Feb 4;117(5):2560-2569. doi: 10.1073/pnas.1902766117. Epub 2020 Jan 21. PubMed PMID: 31964835; PubMed Central PMCID: PMC7007577.

Submitted Articles and Preprints

44. † Awan N, McQuillan LE, **Carlson JC**, Buchanich JM, Youk A, Wahed AS, Wagner AK. Early Chronic Systemic Inflammation Influences on Depressive Symptoms 12 months after Traumatic Brain Injury: A Comparison of Prediction Models. Submitted to *Translational Psychiatry* June 2022.
45. Rivara AC, Russell EM, **Carlson JC**, Pomer A, Naseri T, Reupena MS, Rosenthal SL, Viali S, Minster RL, Weeks DE, DeLany JP, Kershaw EE, McGarvey ST, Hawley NL. Associations between fasting glucose rate-of-change and the missense variant, rs373863828, in an adult Samoan cohort. Submitted to *PLoS One* August 2023.
46. † Gober IG, Russell AL, Shick TJ, Vagni VA, Pham TT, **Carlson JC**, Kochanek PM, Wagner A. Exploratory assessment of the effect of systemic administration of soluble glycoprotein 130 on cognitive performance and chemokine levels in a mouse model of experimental traumatic brain injury. Submitted to *Brain Behav Immun* June 2023.
47. **Carlson JC**, Krishnan M, Liu S, Anderson KJ, Zhang JZ, Yapp TJ, Chiyka EA, Dikec DA, Cheng H, Naseri T, Reupena MS, Viali S, Deka R, Hawley NL, McGarvey ST, Weeks DE, Minster RL. Improving imputation quality in Samoans through the integration of population-specific sequences into existing reference panels. Submitted to *the American Journal of Human Genetics*, October 2023. *medRxiv* 2023.10.31.23297835; doi: <https://doi.org/10.1101/2023.10.31.23297835>
48. Li X, Li Z, Chen H, Selvaraj MS, Van Buren E, Zhou H, Wang Y, Sun R, McCaw ZR, Yu Z, Arnett DK, Bis JC, Blangero J, Boerwinkle E, Bowden DW, Brody JA, Cade BE, Carson AP, **Carlson JC**, Cham N, Chen YI, Curran JE, de Vries PS, Fornage M, Franceschini N, Freedman BI, Gu C, Heard-Costa NL, He J, Hou L, Hung Y, Irvin MR, Kaplan RC, Kardia SLR, Kelly T, Konigsberg I, Kooperberg C, Kral BG, Li C, Loos RJF, Mahaney MC, Martin LW, Mathias RA, Mitchell BD, Montasser ME, Morrison AC, Naseri T, Palmer ND, Peyser PA, Psaty BM, Raffield LM, Redline S, Reiner AP, Rich SS, Sitlani CM, Smith JA, Taylor KD, Tiwari H, Vasani RS, Viali S, Wang Z, Yanek LR, Yu B, NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium, Rice KM, Rotter JI, Peloso GM, Natarajan P, Liu Z, Lin X. A statistical framework for powerful multi-trait rare variant analysis in large-scale whole-genome sequencing studies. Submitted to *Nature Computational Science*, November 2023.
49. Heinsberg LW, Pomer A, Cade BE, **Carlson JC**, Naseri T, Reupena MS, Viali S, Weeks DE, McGarvey ST, Redline S, Hawley NL. Characterization of sleep apnea among a sample of adults from Samoa. (2023). *medRxiv* 2023.11.16.23298644 doi: <https://www.medrxiv.org/content/10.1101/2023.11.16.23298644v1>. Submitted to *Sleep Epidemiology*, November 2023 (SLEEPE-D-23-00061).

Published Abstracts

* equal contribution

† co-authored with graduate student

1. **Carlson JC**. Doctoring Your Clinical Trial with Adaptive Randomization: SAS Macros to Perform Adaptive Randomization. *SAS® Global Forum, San Francisco, CA. April 28-May 1, 2013. Pharmaceutical SAS User Group (PharmaSUG), Chicago, IL, May 12-15, 2013. Oral presentation.*
2. Weyant RJ, Polk D, **Carlson JC**, McNeil DW, Crout RJ, Foxman B, Marazita ML. Family Function Measure Predicts Caries in Northern Appalachia Children. *Journal of Dental Research, 94A:3184, 2015. Platform presentation.*
3. Marazita ML, Shaffer JR, Feingold E, Stanley B, **Carlson JC**, Lewis D, Wang X, McNeil DW, Weyant R, Neiswanger K, Foxman B, Crout RJ. Genetic Risk Factors for Dental Caries in Children and Adults. *Journal of Dental Research, 94A:3186, 2015. Platform presentation.*
4. Shaffer JR, **Carlson JC**, McNeil DW, Weyant R, Crout RJ, Feingold E, Marazita ML. Dioxin receptor gene *AHR* is associated with early childhood caries. *Journal of Dental Research, 94A:1952, 2015. Platform presentation.*
5. Leslie EJ, **Carlson JC**, Shaffer JR, Feingold E, Beaty TH, Murray JC, Weinberg SM, Marazita ML. Uncovering novel genes contributing to phenotypic heterogeneity in a common birth defect. *2015 Human Genetics and Genomics Gordon Conference, Newport, RI. July 19-24, 2015. Poster presentation.*
6. **Carlson JC**, Leslie EJ, Shaffer JR, Schwender H, Taub MA, Ruczinski I, Murray JC, Beaty TH, Marazita ML, Feingold E. Methods for detecting modifier genes responsible for phenotypic heterogeneity. *65th annual meeting of the American Society of Human Genetics, Baltimore, MD. October 6-10, 2015. Poster presentation.*
7. Leslie EJ, Shaffer JR, **Carlson JC**, Feingold E, Laurie C, Doheny K, Neiswanger K, Moreno L, Lidral AC, Czeizel A, Padilla C, Deleyiannis F, Field LL, Wehby G, Vieira A, Castilla E, Butali A, Hecht JT, Buxo CJ, Christensen K, Ma L, Murray JC, Weinberg SM, Marazita ML. Multi-ethnic genome-wide association studies of CL/P identify novel risk genes and evidence for genetic modifiers. *38th annual meeting of the Society of Craniofacial Genetics and Developmental Biology, Baltimore, MD. October 5-6, 2015. Oral platform presentation.*
8. Leslie EJ, **Carlson JC**, Shaffer JR, Feingold E, Laurie C, Doheny K, Moreno L, Czeizel AE, Field LL, Deleyiannis F, Wehby G, Castilla EE, Vieira AR, Butali A, Christensen K, Ma L, Neiswanger K, Lidral A, Beaty T, Murray JC, Weinberg SW, Marazita ML. Uncovering novel genes contributing to phenotypic heterogeneity in a common birth defect. *65th annual meeting of the American Society of Human Genetics, Baltimore, MD. October 6-10, 2015. Poster presentation.*
9. Sandoval RS, Leslie EJ, **Carlson JC**, Marazita ML, Weinberg SM. Lack of evidence for an association between season of conception and nonsyndromic orofacial clefting. *73rd Annual Meeting, American Cleft Palate-Craniofacial Association. Atlanta, GA. April 5-9, 2016. Poster presentation.*

10. Leslie EJ, Shaffer JR, **Carlson JC**, Liu H, Moreno L, Wehby G, Cornell RA, Murray JC, Weinberg SM, Marazita ML. Association of missense variant in *GRHL3* in a genome-wide association study of isolated cleft palate. *73rd Annual Meeting, American Cleft Palate-Craniofacial Association. Atlanta, GA. April 5-9, 2016. Platform presentation.*
11. Alotaibi R, Lee MK, **Carlson JC**, Neiswanger K, Cooper ME, McNeil DW, Weyant RJ, Crout RJ, Marazita ML. Role of Environmental Factors on the Pattern of Dental Caries. *American Association for Dental Research Annual Meeting, Los Angeles, CA. March 16-19, 2016. Poster Presentation.*
12. **Carlson JC**. A SAS Macro for Quick Descriptive Statistics. *Western Users of SAS® Software Educational Forum and Conference, San Francisco, CA. September 7-9, 2016. Platform presentation.*
13. **Carlson JC**. Creating Meaningful Factors from Dietary Questionnaires. *Western Users of SAS® Software Educational Forum and Conference, San Francisco, CA. September 7-9, 2016. Invited speaker.*
14. Leslie EJ, **Carlson JC**, Shaffer JR, Butali A, Buxo CJ, Christensen K, Deleyiannis F, Hecht JT, Moreno L, Orioli IM, Vieira AR, Wehby GL, Feingold E, Weinberg SM, Murray JC, Beaty TH, Marazita ML. Genome-wide analyses reveal subtype-specific genetic effects in orofacial cleft birth defects. *66th Annual Meeting of the American Society of Human Genetics, Vancouver, Canada. October 18-22, 2016. Poster presentation.*
15. Lee MK, Leslie EJ, **Carlson JC**, Orlova E, Feingold E, Marazita ML, Shaffer JR, Weinberg SM. Genome-wide association study of multivariate measures of normal human facial morphology. *66th Annual Meeting of the American Society of Human Genetics, Vancouver, Canada. October 18-22, 2016. Poster presentation.*
16. **Carlson JC**, Leslie EJ, Shaffer JR, Christensen K, Deleyiannis F, Hecht JT, Moreno Uribe LM, Vieira AR, Wehby GL, Feingold E, Weinberg SM, Marazita ML. Genome-wide interaction study implicates *VGLL2* and alcohol exposure in orofacial clefting. *66th Annual Meeting of the American Society of Human Genetics, Vancouver, Canada. October 18-22, 2016. Poster presentation.*
17. Alotaibi RN, Howe BJ, Chernus JM, Mukhopadhyay N, Sanchez CA, Cooper ME, Deleyiannis FW, Neiswanger K, Leslie EJ, **Carlson JC**, Resick JM, Vieira AR, Shaffer JR, Moreno-Urbe LM, Marazita M. Genome-Wide Association Study of Dental Caries in Orofacial Cleft Families. *94th Annual Meeting of the International Association for Dental Research, San Francisco, CA. March 22-25, 2017. Poster presentation.*
18. Feingold E, Chernus J, Bowser J, Rooseboom J, Rajagopalan S, Neiswanger K, Leslie EJ, **Carlson JC**, Sanchez C, Soejima T, Czeizel A, Hecht JT, Castilla EE, Salamanca J, Orioli IM, Poletta FA, Weinberg SM, Marazita ML. GWAS of fingerprint patterns. *67th Annual Meeting of the American Society of Human Genetics, Orlando, FL. October 17-21, 2017. Poster presentation.*
19. Lee MK, Roosenboom J, **Carlson JC**, Leslie EJ, Feingold E, Marazita ML, Shaffer JR, Weinberg SM. Genome-wide association study of cranial vault shape reveals novel loci at 15q26.3 and 17q11.2. *67th Annual Meeting of the American Society of Human Genetics, Orlando, FL. October 17-21, 2017. Poster presentation.*

20. Leslie EJ, **Carlson JC**, Standley J, Petrin A, Shaffer JR, Butali A, Buxo CJ, Castilla E, Christensen K, Deleyiannis FWD, Hecht JT, Field LL, Garidkhuu A, Moreno Uribe LM, Nagato N, Orioli IM, Padilla C, Poletta F, Suzuki S, Viera AR, Wehby GL, Weinberg SM, Beaty TH, Feingold E, Murray JC, Marazita ML. Identification of 16q21 as a modifier locus for orofacial cleft phenotypes. *67th Annual Meeting of the American Society of Human Genetics, Orlando, FL. October 17-21, 2017. Poster presentation. Reviewer's Choice Abstract Award.*
21. **Carlson JC**, Nidey N, Shaffer HR, Butali A, Buxo CJ, Christensen K, Deleyiannis F, Hecht JT, Field LL, Moreno L, Orioli IM, Castilla EE, Poletta FA, Padilla C, Viera AR, Weinberg SM, Wehby GL, Feingold E, Murray JC, Marazita ML, Leslie EJ. Exploring the impact of sex-specific genetic effects on orofacial clefting. *67th Annual Meeting of the American Society of Human Genetics, Orlando, FL. October 17-21, 2017. Poster presentation.*
22. LeClair J, Leslie E, **Carlson JC**, Feingold E, Buxo C, Castilla E, Christensen K, Deleyiannis F, Field LL, Hecht J, Moreno L, Orioli I, Padilla C, Viera A, Wehby G, Murray J, Marazita M, Shaffer J, Weinberg S. Association of Low-Frequency Variants in Regulatory Regions with Non-Syndromic Orofacial Clefts. *75th Annual Meeting of the American Cleft Palate-Craniofacial Association, Pittsburgh, PA. April 10-14, 2018. Oral presentation.*
23. **Carlson JC**, Anand D, Buxo C, Christensen K, Deleyiannis F, Hecht J, Moreno L, Orioli I, Shaffer J, Viera A, Wehby G, Weinberg S, Marazita M, Leslie E. A systematic analysis of orofacial clefts reveals subtype-specific genetic effects. *75th Annual Meeting of the American Cleft Palate-Craniofacial Association, Pittsburgh, PA. April 10-14, 2018. Oral presentation.*
24. **Carlson JC**, Hawley NL, Sun G, Cheng H, Naseri T, Reupena MS, Deka R, McGarvey ST, Minster RL, Weeks DE, NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium. Creating population-specific reference panels for improved genotype imputation. *68th Annual Meeting of the American Society of Human Genetics, San Diego, CA. October 16-20, 2018. Platform presentation.*
25. † Russell EM, **Carlson JC**, Hawley NL, Sun G, Cheng H, Naseri T, Reupena MS, Deka R, Weeks DE, McGarvey ST, Minster RL, TOPMed Diabetes Working Group. Genome-wide association studies of type 2 diabetes phenotypes in Samoans. *68th Annual Meeting of the American Society of Human Genetics, San Diego, CA. October 16-20, 2018. Poster presentation.*
26. Shaffer JR, LeClair J, **Carlson JC**, Feingold E, Buxo CJ, Castilla EE, Christensen K, Deleyiannia FWB, Field LL, Hecht JT, Moreno L, Orioli IM, Padilla C, Vieira AR, Wehby GL, Murray JC, Weinberg SM, Marazita ML, Leslie EJ. Association of Low-Frequency Variants in Regulatory Regions with Non-Syndromic Orofacial Clefts. *68th Annual Meeting of the American Society of Human Genetics, San Diego, CA. October 16-20, 2018. Poster presentation.*
27. † **Carlson JC**, Russell EM, Zhang JZ, Hawley NL, Moors J, Cheng H, Dalbeth N, de Zoysa J, Harre Hindmarsh J, Murphy R, Naseri T, Reupena MS, Stamp L, Tuitele J, Deka R, McGarvey ST, Merriman TR, Weeks DE, Minster RL, and the TOPMed Lipids Working Group. A large effect, Polynesian-specific, stop-gained variant in *BTNL9* is associated with atherogenic lipid profiles. *69th Annual Meeting of the American Society of Human Genetics, Houston, TX. October 15-19, 2019. Poster presentation.*

28. ‡ Krishnan M, Leask M, Major TJ, **Carlson JC**, Zhang JZ, Russell EM, Minster RL, Weeks DE, Hawley NL, Naseri T, Reupena MS, Deka R, Cheng H, McGarvey ST, Dalbeth N, Zoysa J, Murphy R, Stamp L, Hindmarsh JH, Merriman TR, Moors J, TOPMed Lipids Working Group. A novel variant in *CETP* is associated with higher HDL-cholesterol in people of Polynesian ancestry. *69th Annual Meeting of the American Society of Human Genetics, Houston, TX. October 15-19, 2019. Poster presentation.*
29. † Erdogan-Yildirim Z, **Carlson JC**, Pomer A, Hawley NL, Cheng H, Naseri T, Reupena SM, Deka R, Lambert-Messerlian G, McGarvey ST, Weeks DE, Minster RL, TOPMed Reproductive Health Working Group. Identification of susceptibility loci for reproductive traits in Samoan women. *69th Annual Meeting of the American Society of Human Genetics, Houston, TX. October 15-19, 2019. Poster presentation.*
30. † Russell EM, Harris DN, **Carlson JC**, Zhang JZ, Hawley NL, Cheng H, Naseri T, Reupena SM, Chen IY, Rao DC, Hsiung AC, Chuang LM, Sheu W, Darbar D, Deka R, O'Connor TD, McGarvey ST, Weeks DE, Minster RL, TOPMed Population Genetics Working Group. Evidence of natural selection in Samoans is associated with BMI and the immune system. *69th Annual Meeting of the American Society of Human Genetics, Houston, TX. October 15-19, 2019. Poster presentation.*
31. † Zhang JZ, **Carlson JC**, Hawley NL, Sun G, Cheng H, Naseri T, Reupena MS, Deka R, McGarvey ST, Minster RL, Weeks DE. A multivariate Bayesian genetic association analysis of a *CREBRF* variant and adiposity-related phenotypes. *69th Annual Meeting of the American Society of Human Genetics, Houston, TX. October 15-19, 2019. Poster presentation.*
32. † Minster RL, **Carlson JC**, Zhang JZ, Hawley NL, Rosenthal SR, Cheng H, Naseri T, Reupena MS, Viali S, Tuitele J, Deka R, McGarvey ST, Weeks DE. Genome-wide association study of height in Samoan individuals. *70th Annual Meeting of the American Society of Human Genetics, Virtual Meeting, October 27-30, 2020. Poster presentation.*
33. † **Carlson JC**, Zhang JZ, Hawley NL, Blobner BM, Cheng H, Naseri T, Reupena MS, Viali S, Tuitele J, Deka R, McGarvey ST, Minster RL, Weeks DE, TOPMed Blood Pressure Working Group. Samoan GWASs identify novel associations with blood pressure phenotypes. *70th Annual Meeting of the American Society of Human Genetics, Virtual Meeting, October 27-30, 2020. Poster presentation.*
34. † Krishnan M, **Carlson JC**, Zhang JZ, Cheng H, Naseri T, Reupena MS, Deka R, Mathias RA, Taub MA, Hawley NL, McGarvey ST, Weeks DE, Minster RL, TOPMed Hematology and Hemostasis Working Group, TOPMed Structural Variation Working Group. GWAS of telomere length in individuals of Samoan ancestry. *70th Annual Meeting of the American Society of Human Genetics, Virtual Meeting, October 27-30, 2020. Poster presentation.*
35. † Erdogan-Yildirim Z, **Carlson JC**, Pomer A, Hawley NL, Cheng H, Naseri T, Reupena MS, Deka R, Lambert-Messerlian G, McGarvey ST, Weeks DE, Minster RL, TOPMed Reproductive Health Working Group. GWAS of Polycystic Ovarian Syndrome (PCOS) in Samoan women. *70th Annual Meeting of the American Society of Human Genetics, Virtual Meeting, October 27-30, 2020. Poster presentation.*
36. † Fu H, Hawley NL, **Carlson JC**, Russell EM, Cheng H, Naseri T, Reupena MS, Deka R, Choy CC, McGarvey ST, Minster RL, Weeks DE. The missense variant, rs373863828, in *CREBRF* plays a role in longitudinal changes in BMI across adulthood. *70th Annual Meeting of the American Society of Human Genetics, Virtual Meeting, October 27-30, 2020. Poster presentation.*

37. **Carlson JC**, Hawley NL, Cheng H, Naseri T, Reupena MS, Deka R, McGarvey ST, Minster RL, Weeks DE. The role of population-specific genotype reference panels in genetic association studies. *90th Annual Meeting of the American Association of Physical Anthropologists (AAPA), Physically Distanced but Intellectually Connected, April 7-28, 2021. Invited Oral Presentation.*
38. † Wehr J. **Carlson JC**, Russell EM, Krishnan M, Liu S, Cheng H, Naseri T, Reupena MS, Viali S, Tuitele J, Kershaw E, Deka R, Hawley NL, McGarvey ST, Weeks DE, Minster RL. Genome-wide association studies of metabolic traits in Samoans. *72nd Annual Meeting of the American Society of Human Genetics, Los Angeles, CA, October 235 - 29, 2022. Poster presentation. Reviewer's Choice Abstract Award.*
39. † **Carlson JC**, Krishnan M, Liu S, Rosenthal S, Hawley NL, Cheng H, Naseri T, Reupena MS, Viali S, Deka R, McGarvey ST, Minster RL, Weeks DE. Portability of a multiethnic polygenic risk score for low-density lipoprotein cholesterol in a Samoan population. *72nd Annual Meeting of the American Society of Human Genetics, Los Angeles, CA, October 235 - 29, 2022. Poster presentation.*
40. † Gober IG, Barton DJ, Awan N, Ran E, Kumar R, Russell AL, Pham TT, Carlson JC, Rankel M, Wright DW, Wagner AK. Exploring Temporal Dynamics with Aromatization after Moderate-to-Severe TBI and Associations with Outcome. *40th Annual Neurotrauma Symposium, Austin, TX, June 25 – 28, 2023. Poster presentation.*
41. † Gober IG, Russell AL, Shick TJ, Vagni VA, Pham TT, Carlson JC, Kochanek PM, Wagner AK. Systemic administration of soluble glycoprotein 130 promotes cognitive and decreases chemotactic inflammation after controlled cortical impact in mice. *40th Annual Neurotrauma Symposium, Austin, TX, June 25 – 28, 2023. Poster presentation.*
42. **Carlson JC**, Krishnan M, Liu S, Anderson K, Zhang JZ, Cheng H, Naseri T, Reupena MS, Viali S, Deka R, Hawley NL, McGarvey ST, Weeks DE, Minster RL. The extent to which augmenting extant reference panels with population-specific sequences improves imputation quality. *Annual Meeting of the American Society of Human Genetics, Washington, D.C., November 1 – 5, 2023. Poster presentation.*
43. † Maher D, Mukhopadhyay N, Curtis S, **Carlson JC**, Feingold E, Weinberg S, Padilla C, Murray J, Marazita ML, Leslie EJ, Shaffer JR. Genome-wide Association Study of Orofacial Clefts in Filipinos Identifies Novel Locus. *Annual Meeting of the American Society of Human Genetics, Washington, D.C., November 1 – 5, 2023. Poster presentation.*
44. † Yapp TJ, Zhang JZ, Krishnan M, Liu S, Blobner BM, Cheng H, Naseri T, Reupena MS, Viali S, Tuitele J, Deka R, Hawley NL, McGarvey ST, Weeks DE, Minster RL, Carlson JC. Genome-wide association studies of blood pressure phenotypes in 4,819 participants from Samoa and American Samoa. *Annual Meeting of the American Society of Human Genetics, Washington, D.C., November 1 – 5, 2023. Poster presentation.*
45. Erdogan-Yildirim Z, Mukhopadhyay N, **Carlson JC**, Shaffer JR, Weinberg SM, Marazita ML. Genome-wide investigation reveals significant interaction of *FURIN* with maternal vitamin intake on orofacial cleft risk. *Annual Meeting of the American Society of Human Genetics, Washington, D.C., November 1 – 5, 2023. Poster presentation.*

46. Chernus J, Mitrick GE, Lee M, Mukhopadhyay N, **Carlson JC**, Butali A, Buxo-Martinez CJ, Christensen K, Hecht JT, Moreno Uribe LM, Padilla CD, Poletta FA, Wehby GL, Feingold E, Shaffer JR, Leslie EJ, Murray JC, Weinberg SM, Marazita ML. Genome-wide meta-analysis of orbicularis oris muscle defects as a subclinical phenotype in orofacial clefting. *Annual Meeting of the American Society of Human Genetics, Washington, D.C., November 1 – 5, 2023. Poster presentation.*
47. † Zhang, X, Beaty TH, Feingold E, Weinberg SM, Marazita ML, Shaffer JR, **Carlson JC**. Reanalyzing legacy GWAS dataset using TOPMed imputation yields novel loci for orofacial clefting. *Annual Meeting of the American Society of Human Genetics, Washington, D.C., November 1 – 5, 2023. Poster presentation.*

Presentations

1. Doctoring Your Clinical Trial with Adaptive Randomization: SAS Macros to Perform Adaptive Randomization. *SAS® Global Forum, San Francisco, CA. April 28-May 1, 2013. Pharmaceutical SAS User Group (PharmaSUG), Chicago, IL, May 12-15, 2013. Platform presentation.*
2. Methods for detecting modifier genes responsible for phenotypic heterogeneity. *65th annual meeting of the American Society of Human Genetics, Baltimore, MD. October 6-10, 2015. Poster presentation*
3. A SAS Macro for Quick Descriptive Statistics. *Western Users of SAS® Software Educational Forum and Conference, San Francisco, CA. September 7-9, 2016. Platform presentation.*
4. Creating Meaningful Factors from Dietary Questionnaires. *Western Users of SAS® Software Educational Forum and Conference, San Francisco, CA. September 7-9, 2016. Invited speaker.*
5. Genome-wide interaction study implicates *VGLL2* and alcohol exposure in orofacial clefting. *66th Annual Meeting of the American Society of Human Genetics, Vancouver, Canada. October 18-22, 2016. Poster presentation.*
6. Methods for family-based designs in genetic studies of orofacial clefting. *Biostatistics Seminar Series, Department of Biostatistics, University of Pittsburgh.*
7. Orofacial clefting: the case for genetic modifiers. *Science Tuesday Seminar Series, Center for Craniofacial and Dental Genetics, University of Pittsburgh.*
8. Exploring the impact of sex-specific genetic effects on orofacial clefting. *67th Annual Meeting of the American Society of Human Genetics, Orlando, FL. October 17-21, 2017. Poster presentation.*
9. Creating population-specific reference panels for improved genotype imputation. *68th Annual Meeting of the American Society of Human Genetics, San Diego, CA. October 16-20, 2018. Platform presentation.*
10. A large effect, Polynesian-specific, stop-gained variant in *BTNL9* is associated with atherogenic lipid profiles. *69th Annual Meeting of the American Society of Human Genetics, Houston, TX. October 15-19, 2019. Poster presentation.*
11. Creating population-specific reference panels for improved genotype imputation. *Human Genetics Noon Seminar Series, Department of Human Genetics, University of Pittsburgh.*

12. Simulation-based activities to enhance graduate students' understanding of introductory statistics concepts. *Conference on Teaching and Learning in Higher Education, Pittsburgh, PA. November 15, 2019. Poster presentation.*
13. Using a competency-based grading system in an introductory biostatistics course to improve student mastery. *2020 Association of Schools and Programs of Public Health (ASPPH) Annual Meeting. March 18-20, 2020. Poster Presentation. Canceled due to COVID-19.*
14. Using competency-based grading systems to improve student mastery. *Pittsburgh Regional Faculty Symposium, Pittsburgh, PA. March 27, 2020. Workshop presentation. Canceled due to COVID-19.*
15. Lunchtime Chat - Specification Grading. Graduate School of Public Health, University of Pittsburgh, June 29, 2020.
16. Lunchtime Chat – Canvas. Graduate School of Public Health, University of Pittsburgh, July 18, 2020.
17. Population-specific genotype reference panels boost genetic association studies. *Biostatistics Research Day, Department of Biostatistics, University of Pittsburgh, March 4, 2021.*
18. The role of population-specific genotype reference panels in genetic association studies. *90th Annual Meeting of the American Association of Physical Anthropologists (AAPA), Physically Distanced but Intellectually Connected, April 7-28, 2021. Invited Presentation.*
19. Portability of a multiethnic polygenic risk score for low-density lipoprotein cholesterol in a Samoan population. *72nd Annual Meeting of the American Society of Human Genetics, Los Angeles, CA, October 25 - 29, 2022. Poster presentation.*
20. The extent to which augmenting extant reference panels with population-specific sequences improves imputation quality. *PittGene! Interdepartmental Retreat, University of Pittsburgh, Pittsburgh, PA, October 25, 2023. Oral presentation.*
21. The extent to which augmenting extant reference panels with population-specific sequences improves imputation quality. *Annual Meeting of the American Society of Human Genetics, Washington, D.C., November 1 – 5, 2023. Poster presentation.*

Podcasts

1. **Carlson, Jenna.** Interview by Tony Tarchichi. "Study design, performance, analysis, and generalizability." Pediatric Hospital Medicine Podcast. Recorded August 11, 2022. [to be published January 2024].
2. **Carlson, Jenna.** Interview by Tony Tarchichi. "Types of variables and distribution of data." Pediatric Hospital Medicine Podcast. Recorded October 16, 2023. [to be published January 2024].
3. **Carlson, Jenna.** Interview by Tony Tarchichi. "Hypothesis Testing." Pediatric Hospital Medicine Podcast. Recorded January 18, 2023. [to be published January 2024].
4. **Carlson, Jenna.** Interview by Tony Tarchichi. "Regression." Pediatric Hospital Medicine Podcast. Recorded October 16, 2023. [to be published January 2024].

Grants Received

Co-investigator

- 2022 – 2025 Agency: National Institutes of Health (NIDCR)
Grant Number: R00 DE025060
Title: Genetics of Craniofacial Disorders and Related Phenotypes
PI: Elizabeth J. Leslie (Emory University)
Annual Direct Costs: \$29,703
Role: Co-investigator
Effort: 10%
- 2017 – 2023 Agency: National Institutes of Health (NHLBI)
Grant Number: R01 HL133040
Title: Next Generation Association Studies of Adiposity in Samoans Enhanced by a Samoan-Specific Whole Genome Sequence Reference Panel
PI: Ryan L. Minster (University of Pittsburgh)
Annual Direct Costs: \$536,351
Role: Co-investigator
Effort: 15%
- 2020 – 2024 Agency: National Institutes of Health (NINDS)
Grant Number: R21 NS11063
Title: Predictive Biomarkers & Models Assessing Systemic Response to Injury after Moderate-to-Severe TBI
PI: Amy K. Wagner (University of Pittsburgh)
Annual Direct Costs: \$290,845
Role: Co-investigator
Effort: 5%
- 2021 – 2024 Agency: National Institutes of Health (NIDDK)
Grant Number: R01 DK128277
Title: An adolescent-mediated intervention to improve diabetes prevention and management in Pacific Islander families
PI: Nicola L. Hawley (Yale University)
Annual Direct Costs: \$42,454
Role: Co-investigator
Effort: 10%
- 2021 – 2026 Agency: National Institutes of Health (NHLBI)
Grant Number: R01 HG011646
Title: Leveraging the Evolutionary History to Improve Identification of Trait-Associated Alleles and Risk Stratification Models in Native Hawaiians
PI: Charleston Chiang (University of Southern California)
Annual Direct Costs: \$56,250
Role: Co-investigator
Effort: 5.5%

2022 – 2026 Agency: Department of Defense, CDMRP (TBIPH)
Grant Number: W81XWH-22-2-0056
Title: NeuroImmunoEndocrine Interface: Exploring a Unifying Axis for Precision Care in PH & TBI: NEXUS
PI: Amy K. Wagner (University of Pittsburgh)
Annual Direct Costs: \$1,356,768
Role: Co-investigator
Effort: 10%

2023 – 2027 Agency: National Institutes of Health (NHLBI)
Pending Grant Number: R01
Title: Lipidomics and structural genomics of cardiometabolic health in Samoan adults
PI: Ryan L. Minster (University of Pittsburgh)
Annual Direct Costs: \$1,220,929
Role: Co-investigator
Effort: 20%

Statistician on grants

2022 – 2025 Agency: National Institutes of Health (NIDCR)
Grant Number: R01 DE032122
Title: Investigating the role of genes, maternal exposures, and interactions on orofacial clefts
PI: John Shaffer (University of Pittsburgh)
Annual Direct Costs: \$466,696
Role: Statistician
Effort: 35%

Training Grants

2022 – 2027 Agency: National Institutes of Health (NIDDK)
Grant Number: K01 DK132514
Title: Diabetes clinical outcomes associated with retention and engagement in care in Samoa (Diabetes CARE)
PI: Anna Rivara (Yale University)
Annual Direct Costs: \$128,040
Role: Mentor

Other Research and Training Activities

2010 Trainee, Summer Institute for Training in Biostatistics (SIBS), University of Pittsburgh

2011 Undergraduate Student Researcher, Following the Longitudinal Aspects of Student Health (FLASH) Study, California Polytechnic State University

2013 Research and Development Intern, Developed algorithms for copy number variation detection with array CGH technology, Agilent Technologies

2013 – 2017 Graduate Student Researcher, Analyzed large scale genetic data examining mechanism behind complex traits including oral health and orofacial clefting, Center for Craniofacial and Dental Genetics, University of Pittsburgh

- 2014 – 2015 Research Mentor, Summer Institute for Training in Biostatistics (SIBS), University of Pittsburgh
- 2019 – 2020 Faculty Trainee, SPRINGBOARD program, Office of Academic Career Development Health Sciences, University of Pittsburgh
- 2019 – 2020 Mentee, American Statistical Association Mentorship Program
- 2023 – current Faculty Mentoring Program, School of Public Health, University of Pittsburgh
- 2024 Mothers Leading Science Program, Institute for Clinical and Research Education, University of Pittsburgh

Service

Service to the School and University

- 2017 – 2018 Volunteer for Panel Discussions, Health Professional Prep (HPP) Program, University of Pittsburgh
- 2018 – 2019 Member, M.S. Innovations Committee, contributed to creating two new concentrations in biostatistics, Department of Biostatistics, University of Pittsburgh
- 2018 – 2023 Member, M.S. Program Committee, attended recruitment events and reviewed applications, Department of Biostatistics, University of Pittsburgh
- 2018 – 2023 Member, M.S. Comprehensive Exam Committee, created exam questions and graded, Department of Biostatistics, University of Pittsburgh
- 2018 – 2023 Member, M.P.H. Committee, reviewed curriculum and other issues relating to core-courses, School of Public Health, University of Pittsburgh
- 2018 – 2023 Member, Curriculum Committee, reviewed syllabi, contributed to new course development, and addressed curriculum concerns, Department of Biostatistics, University of Pittsburgh
- 2018 – 2023 Member, Ph.D. Epidemiology Preliminary Exam (Biostatistics Exam Subcommittee), created exam questions and graded, Department of Epidemiology, University of Pittsburgh
- 2019 – current Faculty judge for student presentations, Dean’s Day Research Competition, School of Public Health, University of Pittsburgh
- 2020 Chair, Convocation – Biostatistics Departmental Celebration Planning Committee, planned and coordinated a virtual celebration for graduating biostatistics students, Department of Biostatistics, University of Pittsburgh
- 2020 Member, Teaching Task Force, created recommendations and advised faculty on teaching online or hybrid during the COVID-19 pandemic, Department of Biostatistics, University of Pittsburgh
- 2020 – 2022 Member, Ph.D. Biostatistics Qualifying Exam (Applied Exam Subcommittee), created exam questions and graded, Department of Biostatistics, University of Pittsburgh

- 2021 Member, B.S.P.H. and graduate educational programs planning group, developed proposal for five new undergraduate courses in biostatistics, Department of Biostatistics, University of Pittsburgh
- 2021 Member, Diversity planning group, developed recommendations for supporting diversity, equity, and inclusion efforts in the department, Department of Biostatistics, University of Pittsburgh
- 2021 – 2022 Member, Department of Biostatistics Chair Search Committee, School of Public Health, University of Pittsburgh
- 2022 Chair, Ph.D. Biostatistics Qualifying Exam (Applied Exam Subcommittee), created exam questions and graded, Department of Biostatistics, University of Pittsburgh
- 2022 – 2023 M.S. Program Director, Department of Biostatistics, University of Pittsburgh
- 2022 – current Member, Department of Human Genetics Chair Search Committee, School of Public Health, University of Pittsburgh
- 2022 – 2023 Chair, Department of Biostatistics Faculty Search Committee, School of Public Health, University of Pittsburgh
- 2022 – current Member, Data Science in Graduate Education Working Group, contribute to university-wide plans for unifying data science teaching, University of Pittsburgh

Service to the Field of Scholarship

Editorial Boards, Editorships

- 2022 – current Reviewer Editor, *Frontiers in Genetics*
- 2023 – current Editor, *Genetics Editorial Review Board, Cleft Palate Craniofacial Journal*

Manuscript Review

- 2017 *BMC Oral Health*
- 2018 *Clinical Biochemistry*
- 2019 *PLoS One*
- 2019 *Human Molecular Genetics*
- 2021 *Genetic Epidemiology*
- 2021 *Annals of Medicine*
- 2021 – current *Circulation: Genomic and Precision Medicine*
- 2021 – current *The Cleft Palate Craniofacial Journal*
- 2022 – current *Frontiers in Genetics*
- 2022 *Scientific Reports*
- 2022 – current *Journal of Statistics and Data Science Education*
- 2022 *Journal of American Geriatrics Society*

Study Sections, Review Panels, Advisory Boards

- 2019 – current Essay reviewer, American Society of Human Genetics Annual DNA Day Essay Contest
- 2021 Abstract Reviewer, Annual Meeting of the American Society of Human Genetics 2021, Topic: Statistical Genetics and Genetic Epidemiology II: Application to specific phenotypes
- 2023 Reviewer, Quantitative Methodologies Program (QuMP) Pilot Competition, University of Pittsburgh Clinical and Translational Science Institute

Leadership in Scholarly and Professional Organizations

- 2016 Section Chair, Western Users of SAS Software Educational Forum and Conference, San Francisco, CA
- 2018 – current Member, Anthropometry and Adiposity Working Group, NHLBI Trans-Omics for Precision Medicine (TOPMed) Program
- 2018 – current Member, Analysis Working Group, NHLBI Trans-Omics for Precision Medicine (TOPMed) Program
- 2019 – current Essay reviewer, American Society of Human Genetics Annual DNA Day Essay Contest
- 2020 – current Member, Lipids Working Group, NHLBI Trans-Omics for Precision Medicine (TOPMed) Program
- 2020 – current Member, Blood Pressure Working Group, NHLBI Trans-Omics for Precision Medicine (TOPMed) Program
- 2022 – current Portal Co-director, Teaching Statistics in the Health Sciences, American Statistical Association
- 2023 Moderator, Annual Meeting of the American Society of Human Genetics Annual Meeting 2023, Session: “Genetic tango: Dance between gene-gene and gene-environment interactions”

Service for Practice and Policy-Making

Non-Governmental and Community-Based Organizations

- 2015 – 2017 Board Member, Community Research Advisory Board, Center for Health Equity, School of Public Health, University of Pittsburgh

Non-Professional Service

- 2018 Handler, Therapy Dogs International
- 2018 – 2021 Food Pantry Director, Bellefield Food Closet