Cody Carroll

Curriculum Vitae

Department of Statistics
University of California, Davis
✉ *cjcarroll@ucdavis.edu*
codycarroll.github.io

Education

2021 **PhD in Statistics**, *University of California, Davis*.
Advisor: Hans-Georg Müller

2017 **MS in Statistics**, *University of California, Davis*.

2014 **BS in Mathematics**, *University of Texas, Austin*.

Research Interests

Functional and longitudinal data analysis– time dynamics of multivariate functional data; constrained functional data analysis; imputation; analysis of random objects

Publications and Preprints

* *indicates co-first authorship*

Published/In Press

2020 *Cross-component Registration for Multivariate Functional Data, with Application to Growth Curves*
C. Carroll, H.-G. Müller, and A. Kneip, *Biometrics* 2020.

2020 *Time-Dynamics of COVID-19*
C. Carroll, S. Bhattacharjee, Y. Chen, P. Dubey, J. Fan, A. Gajardo, X. Zhou, H.-G. Müller, J.-L. Wang, *Scientific Reports* 2020.

2020 *Mountaineers in an extreme environment: an update on effects of age and sex on rates of success and death on Mount Everest*
R. B. Huey*, **C. Carroll***, R. Salisbury, J.-L. Wang, *PLoS One* 2020.

- received media coverage from *The Economist*, *Reuters*, & *The London Times*

2021 *A Practical Method to Quantify Knowledge-Based Dose Volume Histogram Prediction Accuracy and Uncertainty with Reference Cohorts*
B. Covele, **C. Carroll**, K. Moore, *Journal of Applied Clinical Medical Physics*, 2021.

Under Review

2021+ *Latent Transport Models for Multivariate Functional Data*
C. Carroll, and H.-G. Müller. *Submitted to JASA*.

2021+ *Learning Delay Dynamics for Multivariate Stochastic Processes, With Application to Predicting COVID-19 Case Trajectories in the United States,*
P. Dubey, Y. Chen, A. Gajardo, S. Bhattacharjee, **C. Carroll**, H. Chen, Y. Zhou, and H.-G. Müller. *Submitted to Journal of Mathematical Analysis and Applications*.

2021+ *Comparison of Diagnostic Predictors of Neonatal Survivability in Non-Domestic Caprinae*
T. N. Bliss, M. J. Marinkovich, R. E. Burns, **C. Carroll**, M. M. Clancy, and L. L. Howard. *Submitted to Journal of Zoo and Wildlife Medicine*.

Software

Contributor *fdapace: Functional Data Analysis and Empirical Dynamics. R package.*
C. Carroll, A. Gajardo, Y. Chen, X. Dai, J. Fan, P. Z. Hadjipantelis, K. Han, et al.
`https://CRAN.R-project.org/package=fdapace`.

Presentations

Talks

2021 **Lawrence Livermore National Lab**.
Latent Transport Models for Multivariate Functional Data

2020 **Statistics Student-Led Seminar Series**, *UC Davis*.
Shift-Warping for Multivariate Functional Data

2019 **NSF RTG Statistics Workshop Series**, *UC Davis*.
Deception and Coin Flips: Statistical Intuition through Lies and Games

2018 **NSF RTG Symposium: Modern Tools for Statistics**, *UC Davis*.
An Introduction to Functional Data Analysis

2018 **Statistics Student-Led Seminar Series**, *UC Davis*.
Time Warping for Human Growth Curves

Posters

2020 **Joint AAPM/COMP Meeting**, *Benchmarking Dose-Volume Histogram Prediction Accuracy Between Different Knowledge-Based Models*, Vancouver, BC, Canada

Awards and Fellowships

2021 **Peter Hall Graduate Research Award**.
Awarded once yearly to the top PhD graduate for excellence in statistical research during degree, *Dept. of Statistics, UC Davis*

2021 **Alan Fenech Service Award**.
Dept. of Statistics, UC Davis

2020 **Outstanding Graduate Teaching Award**.
Awarded to 10 graduate students university-wide, *Grad. Studies, UC Davis*

2020 **Excellence in Teaching Award**.
Awarded to one student instructor in the department on special occasion, *Dept. of Statistics, UC Davis*

2015-2020 **NSF Research Training Grant Recipient**.

2016-2019 **Summer Statistics Research Fellowship Award**.
Dept. of Statistics, UC Davis

2017-2019 **TA Recognition Award**.
Dept. of Statistics, UC Davis

2015-2018 **UC Davis Graduate Scholars Fellowship**.
Grad. Studies, UC Davis

Teaching

Instructor of Record

Summer 2019 **Brief Course in Mathematical Statistics II**.
UC Davis, Dept. of Statistics

Spring 2019 **Applied Statistics for Biological Sciences**.
UC Davis, Dept. of Statistics

Summer 2018 **Applied Statistics for Business and Economics**.
UC Davis, Dept. of Statistics/Dept. of Economics

Teaching Assistant

- *Applied Statistics for Biological Sciences* (Su17) UCD, Statistics
- *Applied Statistics for Business and Economics* (F19) UCD, Statistics/Economics
- *Applied Statistical Methods Regression Analysis* (F17) UCD, Statistics
- *Introduction to Probability Theory* (S18) UCD, Statistics
- *Mathematical Statistics* (W21) UCD, Statistics
- *Survival Analysis* (F18) UCD, Statistics/Biostatistics, *Grad. Level*
- *Statistical Consulting* (W18, W19, W20) UCD, Statistics/Biostatistics, *Grad. Level*

International Teaching

2014-2015 **ESL Teacher**, *Nishinomiya Imazu Senior High School*, Nishinomiya, Japan.

Mentoring Experience

2017-2020 **NSF Research Training Group**, *Dept. of Statistics, UC Davis*.
Advising Undergraduate Research

- *Warping methods for wearable device data*, with Hainiu Xu
- *Functional regression for wearable device data*, with Phoebe Biying Li
- *Functional clustering for wearable device data*, with Weiyi Chen
- *Geographic trends for functional housing price data*, with Yunbai Zhang
- *Functional data analysis of global temperature extrema*, with Cynthia Lai

2020 **Mentor for Undergraduate Honors Thesis**.
Warping methods for wearable device data, by Hainiu Xu

Service and Leadership

UC Davis

- Graduate Student Representative, Dept. of Statistics

Reviewer

- Annals of Statistics
- Journal of the American Statistical Association
- Biometrika
- Computational Statistics and Data Analysis
- Statistica Sinica
- Computer Methods and Programs in Biomedicine

Technical skills

Advanced R, git, LaTeX
Intermediate SQL, Python, Julia, Travis-CI