Colin Rundel rundel@gmail.com / colin.rundel@duke.edu
204 Old Chemistry Building • Dept of Statistical Science, Duke University

Research Interests

Applied spatial statistics with a focus on biological and ecological systems, Bayesian statistics, computational methods, statistics and computing education and pedagogy.

Education

University of California, Los Angeles, Department of Statistics

Ph.D. in Statistics, 2012
M.S. in Statistics, 2008

Dissertation Topic: Bayesian Methods for Spatial Assignment of Migratory Birds
Advisors: Jan de Leeuw and John Novembre

California Institute of Technology

B.S. in Biology, 2003

Employment

Assistant Professor of the Practice — June 2015 - Present
Department of Statistical Science, Duke University

Lecturer in Statistics and Data Science — May 2019 - May 2021
School of Mathematics, University of Edinburgh

Visiting Assistant Professor / Lecturer — January 2012 - May 2015
Department of Statistical Science, Duke University

Postdoctoral Associate — July 2012 - April 2014
Department of Statistical Science, Duke University

Graduate Student Researcher — September 2010 - December 2011
Novembre Lab, UCLA

Senior Statistical Consultant — March 2009 - December 2011
Statistical Consulting Center, UCLA

Graduate Teaching Assistant — September 2006 - July 2010
Dept. of Ecology and Evolutionary Biology, Dept. of Statistics, UCLA

Teaching

Duke University

Sta 30 - Statistics and Quantitative Literacy - Fa 12
Sta 102 - Introductory Biostatistics - Sp 13, Sp 14, Fa 14, Sp 15, Fa 15, Sp 16, Su 16
Sta 111 - Probability and Statistical Inference - Su 14
Sta 112 - Better Living through Data Science - Fa 16
Sta 230 - Probability - Fa 12, Sp 14
Sta 323 - Statistical Computing - Sp 16, Sp 17, Sp 18, Sp 19
Sta 444 / 644 - Spatio-Temporal Modeling - Sp 17, Sp 18, Fa 18
Sta 523 - Statistical Programming - Fa 14, Fa 15, Fa 16, Fa 17, Fa 18, Fa 21
Sta 790 - Advanced Statistical Computing - Sp 19

University of Edinburgh

Math 08068 - Facets of Mathematics - Regression Modeling Theme - Sp 19
Math 11176 - Statistical Programming - Sp 19, Sp 20
Math 11205 - Machine Learning in Python - Fa 20, Fa 21

Online Teaching

Coursera - Statistics with R Specialization
- Bayesian Statistics
- Statistics with R Capstone

Publications

Çetinkaya-Rundel, M., Hardin, J., Baumer, B. S., McNamara, A., Horton, N. J., Rundel, C. (2021). *An educator's perspective of the tidyverse.* Technology Innovations in Statistics Education (in revision), arXiv preprint arXiv:2108.03510.

Poulsen, J., Beirne, C., Rundel, C., Baldino, M., Kim, S., Knorr, J., Minich, T., Jin, L., Núñez, C., Xiao, S., Mbamy, W., Obiang, G., Masseloux, J., Nkoghe, T, Ebanega, M., Clark, C., Fay, M., Morkel, P., Okouyi, J., White, L., Wright, J. (2021). *Long distance seed dispersal by forest elephants.* Frontiers in Ecology And Evolution. 9, 962. DOI.

Beckman M., Çetinkaya-Rundel M., Horton N., Rundel C., Sullivan A., Tackett M. (2020) *Implementing Version Control With Git and GitHub as a Learning Objective in Statistics and Data Science Courses.* Journal of Statistics Education. 29 (Sup 1), 132 - 144. DOI.

Johnson A., Rundel C., Hu J., Ross K., Rossman A. (2020) *Teaching an Undergraduate Course in Bayesian Statistics: A Panel Discussion.* Journal of Statistics Education. 28 (3), 251 - 261. DOI.

Beirne C., Nuñez C., Baldino M., Kim S., Knorr J., Minich T., Jin L., Xiao S., Mbamy W., Obiang G., Masseloux J., Nkoghe T., Ebanega M., Rundel C., Wright J., Poulsen J. (2019) *Estimation of gut passage time of wild, free roaming forest elephants.* Wildlife Biology. 2019 (1).

Cetinkaya-Rundel M., Rundel C.W. (2017) *Infrastructure and tools for teaching computing throughout the statistical curriculum.* The American Statistician. 72 (1), 58 - 65.

Rundel C.W., Schliep E.M., Holland D., Gelfand A. (2015) *A data fusion approach for spatial analysis of speciated $PM_{2.5}$ across time.* Environmetrics. 26 (8), 515 - 525.

Rundel C.W., Wunder M., Alvarado A.H., Ruegg K., Harrigan R., Schuh A., Jeffrey K., Siegel R., DeSante D.F., Smith T.B., Novembre J. (2013) *Novel statistical methods for integrating genetic and stable isotope data to infer individual-level migratory connectivity.* Molecular Ecology. 22 (16), 4163 - 4176.

de Bocanegra H.T., Rostovsteva D., Çetinkaya M., Rundel C.W., Lewis C. (2011). *Quality of reproductive health services to limited English proficient patients.* Journal of Health Care for the Poor and Underserved, 22 (4), 1167 - 1178.

Walker D.W., Muffat J, Rundel C.W., Benzer S. (2006). *Overexpression of a Drosophila Homolog of Apolipoprotein D Leads to Increased Stress Resistance and Extended Lifespan.* Current Biology, 16 (7), 674 - 679.

Magazines

Rundel, C.W., Cetinkaya-Rundel M. (2016) La Quinta is Spanish for next to Denny's, Chance 29 (2), 53 - 57

Rundel C.W. (2002) *Genes, Aging, and the Future of Longevity* Engineering & Science, 65 (4), 36 - 40.

Talks & Workshops

RStudio Global 2021 — January 2021
- parsermd - parsing R Markdown for fun and profit

TLMSCO — September 2020
- Teaching computing using git and GitHub

JSM 2020 (Invited) August 2020
Computation Infrastructure for Teaching Bayesian Modeling

Teaching Statistics and Data Science Online (Online Workshop) July 2020
Workshop 1: Teaching R online with RStudio Cloud
Workshop 2: Building interactive tutorials in R
Workshop 3: Teaching computing with Git and GitHub

RStudioConf 2020 January 2020
livecode: broadcast your live coding sessions from and to RStudio

JSM 2019 August 2019
ghclass: an R package for managing classes with GitHub

JSM 2019 (Workshop) July 2019
Reproducible Computing

UseR! 2019 July 2019
ghclass: an R package for managing classes with GitHub

SDSS 2019 (Invited) May 2019
Using Rocker containers and CI for teaching R-based courses

ICOTS10 2018 (Workshop) July 2018
Teaching Data Science, Reproducibly

ISBA World Meeting 2018 (Short Course) June 2018
Reproducible Computing

Joint Statistical Meetings 2017 (Invited) August 2017
Moving Away from Ad Hoc Statistical Computing Education

UseR! 2017 (Tutorial) July 2017
Data Carpentry: Open and Reproducible Research with R

Joint Statistical Meetings 2016 (Invited) August 2016
Statistical Computing as an Introduction to Data Science

UseR! 2016 July 2016
Continuous Integration and Teaching Statistical Computing with R

Joint Statistical Meetings 2015 August 2015
Teaching statistical computing leveraging the github ecosystem

UseR! 2015 July 2015
Teaching R using the github ecosystem

Data Analytics in Business and Social Science Seminar, Duke SSRI April 2015
Geospatial data and the R ecosystem

Joint Statistical Meetings 2014 August 2014
A Data Fusion Approach for Space-Time Analysis of Speciated $PM_{2.5}$

Duke Dept of Statistical Science Seminar February 2014
Using GPUs to improve the computational efficiency of Gaussian process models

Joint Statistical Meetings 2013 August 2013
GPUs, linear algebra, and efficient computing for Gaussian process models

UseR! 2013 July 2013
Leveraging GPU libraries for efficient computation of Gaussian process models in R

Joint Statistical Meetings 2012 August 2012
Leveraging GPU Libraries for Efficient Computation of Bayesian Spatial Assignment Models in R

UseR! 2012 June 2012
rgeos: spatial geometry predicates and topology operations in R

Joint Statistical Meetings 2011 August 2011
Spatial Models for Bird Origin Assignment Using Genetic and Isotopic Data

Service

Guest Associate Editor, Journal of Statistics and Data Science Education — Fall 2021
Special Issue on Teaching Reproducibility and Responsible Workflow

DSS Master's Advisory Committee — Fall 2017 - Spring 2019

Duke's Information Technology Advisory Council — Fall 2017 - present

DSS Computing Committee — Summer 2014 - Spring 2019, Fall 2021 - present
Chair, Spring 2017 - Spring 2019, Fall 2021 - present

ASA DataFest @ Duke — Fall 2011 - Spring 2019
Co-organizer

Bayes Impact at Duke — Fall 2014 - Spring 2016
Scientific Registry of Transplant Recipients
Motion Math

Software

`md4r`: R wrapper of the md4c markdown parsing library.

`checklist`: Tools for automating checking of R projects, with a focus on automated feedback via CI tooling like GitHub actions.

`parsermd`: Tools for parsing and programmatically interacting with R Markdown documents.

`learnrhash`: Tools for recording student results for questions and exercises in learnr documents.

`livecode`: Library for broadcasting source files during live codeing sessions.

`ghclass`: Library for managing classroom and assignment related tasks on github.

`rgeos`: R interface to the Geometry Engine, Open Source (GEOS) library.

`isoscatR`: R package for smoothed and continuous assignment testing (SCAT) of genetic samples

`timezone`: A small R package for finding timezone names from geographic coordinates

`RcppGP`: Tools for efficiently working with Gaussian Processes in R / C++

`mapnik`: parser and generator for the carto map style language.

Memberships

American Statistical Association
International Society for Bayesian Analysis