**Post-workshop resources:**

**Please remember to take our survey!**

[Survey link](https://umt.co1.qualtrics.com/jfe/form/SV_acaQ7zuqT1BvalM)

**More about SuSiE:**

If you want to read a detailed guided about SuSiE, including explanations of all the functions available in the packages and helpful vignettes for how to use SuSiE, check out the reference manual and vignettes available on the CRAN page.

CRAN page: <https://cran.r-project.org/web/packages/susieR/index.html>

**Paper introducing the method:**

This paper has all the gory details on the IBSS algorithm that powers SuSiE! Great paper, but it is a tough read for those who are not fluent in mathematics.

Gao Wang, Abhishek Sarkar, Peter Carbonetto, Matthew Stephens, **A Simple New Approach to Variable Selection in Regression, with Application to Genetic Fine Mapping**, Journal of the Royal Statistical Society Series B: Statistical Methodology, Volume 82, Issue 5, December 2020, Pages 1273–1300, <https://doi.org/10.1111/rssb.12388>

<https://academic.oup.com/jrsssb/article/82/5/1273/7056114>

**More about LASSO:**

If you want to read a detailed guided about glmnet LASSO, including explanations of all the functions available in the packages and helpful vignettes for how to use LASSO, check out the reference manual and vignettes available on the CRAN page.

CRAN page: <https://cran.r-project.org/web/packages/glmnet/index.html>

**Paper introducing the method:**

Robert Tibshirani, **Regression Shrinkage and Selection Via the Lasso**, Journal of the Royal Statistical Society: Series B (Methodological), Volume 58, Issue 1, January 1996, Pages 267–288, <https://doi.org/10.1111/j.2517-6161.1996.tb02080.x>

<https://academic.oup.com/jrsssb/article/58/1/267/7027929>

**Other packages you may be interested in that implement LASSO:** monomvn, gglasso, glmmLasso, blasso

**Fixed vs Random Effects:**

If you are disappointed that it’s hard to add random effects to sparse models, it may help you out to read this blog post on fixed and random effects. It turns out that distinguishing between the two might not be all that important.

<https://dynamicecology.wordpress.com/2015/11/04/is-it-a-fixed-or-random-effect/>

**Recommended reading on exploration, inference, and prediction:**

This is a key paper for those thinking about why we use models. Get ready to think about philosophy of modeling, and start questioning why and how you use statistical methods in your own work.

Tredennick, Andrew T., et al. "**A practical guide to selecting models for exploration, inference, and prediction in ecology**." Ecology 102.6 (2021): e03336.

**Modelscapes paper on evaluating different kinds of sparse models:**

Members of the Modelscapes grant (the grant that sponsored this workshop), led by Josh Jahner have written a paper about a bunch of different sparse methods and when they will be the most useful. We compare and contrast them, and show how the most important determinant of modeling success is usually the sample size. We hope the paper will be published soon, but in the meantime, here is our preprint!

<https://www.biorxiv.org/content/10.1101/2024.03.15.585297v2.abstract>

**Why you shouldn’t do exploration and inference on the same dataset (Freedman’s paradox):**

Freedman, D. A. (1983). A note on screening regression equations. *The American Statistician*, *37*(2), 152-155.

<https://www.tandfonline.com/doi/abs/10.1080/00031305.1983.10482729>

**Also recommended:**

Breiman, L. (2001). Statistical modeling: The two cultures (with comments and a rejoinder by the author). *Statistical science*, *16*(3), 199-231.

<https://projecteuclid.org/journals/statistical-science/volume-16/issue-3/Statistical-Modeling--The-Two-Cultures-with-comments-and-a/10.1214/ss/1009213726.full>

**Papers associated with practice data sets:**

The data sets we provide for you during the workshop are associated with projects done by past members of the Modelscapes grant (the grant that sponsored this workshop). Check out these interesting papers by Bella Oleksy and Eliza Grames!

**Lake color change:** <https://iopscience.iop.org/article/10.1088/1748-9326/ac939c/meta>

**Sparse modeling for climate variable selection:** <https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1002/ecy.4231>