Software Guide

Hannah M Carroll

August 1, 2019

### Supplementary Information - Software Guide

The authors claim no affiliation with or authorship of any software package used in these exercises. The information below is provided solely to assist those new to teaching in R/RStudio.

## Optional: Signularity Container

A Singularity container is a self-contained OS image which provides all required software packages and their appropriate versions. For most institutions, your IT department must implement the Singularity container. This is optional, but will install the recommended versions of JAGS and all R packages required for this exercise.

## Software Requirements

# Introductory exercise:

R Version 3.5.1 or later  
RStudio Version 1.1.456 or later

**R packages**  
readxl 1.1.0  
ggplot2 3.2.0  
cluster 2.0.7.1  
factoextra 1.0.5  
tRophicPosition 0.7.7  
viridis 0.5.1

# Advanced exercise:

R Version 3.5.1 or later  
RStudio Version 1.1.456 or later  
JAGS version 4.3.0 or later

**R packages** rjags 4.8  
simmr 0.4.1  
dplyr 0.8.2  
ggplot2 3.2.0

## JAGS vs rjags

JAGS (Just Another Gibbs Sampler) is a standalone software program which was developed to analyze Bayesian hierarchical models using Markov Chain Monte Carlo (MCMC) simulation. It must be installed on each computer on which the *advanced* exercise will be used. It is not needed for the introductory exercise. The R package rjags is your interface to JAGS. Package rjags solves isotope mixing models using the framework provided by JAGS. The exercise has been tested on JAGS version 4.3.0 using rjags version 4.8. Find the JAGS readme at <http://mcmc-jags.sourceforge.net/> and rjags documentation at <https://cran.r-project.org/web/packages/rjags/rjags.pdf>