# OTN Workshop Install Instructions

# Preparation

Attendees should:

Bring a laptop with the following software installed (see installation instructions below). You will need strong internet connection and more than one screen (if possible). These are interactive workshops.

WARNING: Software installation may require administrative rights to your machine and may take considerable time, depending on internet connection. Install in the order shown so that RStudio will automatically find and link with R. If you have different versions of the software already installed on your computer, we recommend removing previously installed software and re-installing the recommended version to minimize the possibility of installation errors.

Detailed installation instructions are below.

1. Zoom <http://zoom.us/>
2. R version: 3.6.x or newer (recommend 4.0.x)
3. RStudio
4. GDAL (V. 3.0): An open source geospatial library for manipulating spatial data. It is an external program (not an R package) and is required for non-linear interpolation of fish tracks in the ‘glatos’ package.
5. **Windows users:** RTools (version compatible with your R version <https://cran.r-project.org/bin/windows/Rtools/> ): A collection of resources for building R packages. It is an external program (not an R package) and is required to install the glatos R package from GitHub.
6. Dataset and workshop code
   1. You can download the datasets and code for this workshop from https://github.com/ocean-tracking-network/2024-fact-meeting-workshop.
      1. Select the GREEN "code" button at the top and choose "Download ZIP".
      2. Unzip the folder and move to secure location on your computer (Documents, Desktop etc.)
      3. Copy the folder's path and use it to set your working directly in R using `setwd('<path-to-folder>')`. This will be covered during the workshop.
   2. If you are familiar with Git and Github, feel free to clone this repository as you normally would, by running `git clone https://github.com/ocean-tracking-network/2024-fact-meeting-workshop.git` in a terminal program and following from step 3 above.
7. Various R packages, provided on the Setup page of the workshop website (link provided in the Eventbrite prior to the first day of the workshop) and also in the `Setup.R` file provided on the workshop GitHub, which you have just downloaded in step 5.

# Instructions for installing R:

1. Point your browser to <https://cran.r-project.org/mirrors.html> and select one of the mirrors for the USA.
2. Click on the "Download" link of precompiled binary for the distribution that matches your operating system.
   1. If you are installing to a Windows computer, click on "Download R for Windows" link. Under subdirectories, click on “base” and then “Download R 4.0.3 for Windows.”
   2. If you are installing to a Mac, click "Download R for (Mac) OS X" and on the resulting webpage click the "R-4.0.3.pkg" link to download the installer to your computer.
3. Once R finishes downloading, click on the installer and follow the prompts. Make sure to "install as administrator" if you are on Windows. Otherwise, the default options are fine.
4. After install finishes, you should be able to open a R command line terminal by selecting the icon in Windows, or through Launchpad in MacOS.

# Instructions for installing RStudio:

1. Point your browser to <https://www.rstudio.com/products/rstudio/download/> , click the Download button under the RStudio Desktop Free version and you will be directed to download the appropriate RStudio installer for your operating system.
2. Click on downloaded installer and follow the prompts for installing RStudio. Unless you have specific installation requirements, the default options are fine.
3. Once RStudio has finished installing, click on the program icon. RStudio should open with an active R console.

# Instructions for installing Rtools:

**Only Windows Users need to install Rtools – not MacOS**

1. Point your browser to <https://cran.r-project.org/bin/windows/Rtools/> . Select the file which aligns with your R version to download the file and then run the installer. Default options should be fine.
2. After installation on Windows operating system, Rtools will need to be added to the system Path variable. Open System Properties (enter “system environment variables” in the windows search box and selected “Edit the system environment variables”) and select the box named “Environment Variables”. In the “System Variables” box, click “Path” in the “Variable” column, then click “Edit” and then “New”. Add (type or paste) the full path to the Rtools binaries folder (e.g., C:\Rtools\bin). Click OK and OK again to close the Environment Variables window.
3. Check that Rtools was installed correctly using the R package ‘devtools’. In RStudio, install the R package ‘devtools’ using the R code below: **install.packages("devtools")**
4. Use the ‘devtools’ function ‘find\_rtools’ to check if rtools was installed corrected. Use the code below:

**library(devtools)**

**devtools::find\_rtools()**

If the result is TRUE, you are done. Otherwise, a warning message will indicate that something went wrong. Double check that the Rtools\bin directory was added correctly to the system Path variable.