

Introduction to Data Analysis with R

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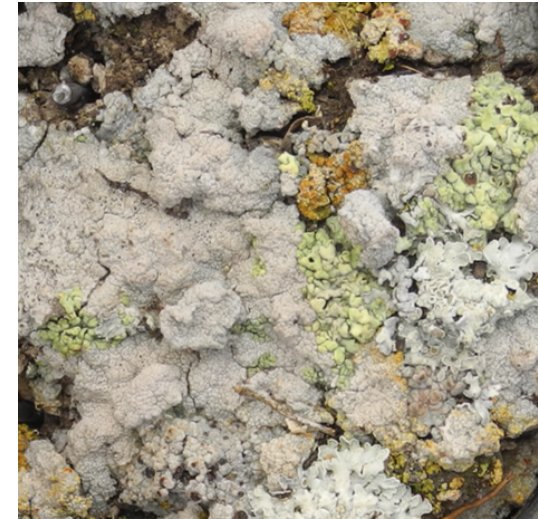


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Artwork by [Allison Horst](#)

Who am I?

- scientific modeller with ecology background
- working in the **theoretical ecology group** at Freie Universität
- PhD student at Freie Universität Berlin
 - Topic: Modelling the impact of biological soil crusts on dryland hydrology



Teaching

- Statistics with R for Biology Master students
- Workshops on R packages, R development, ...



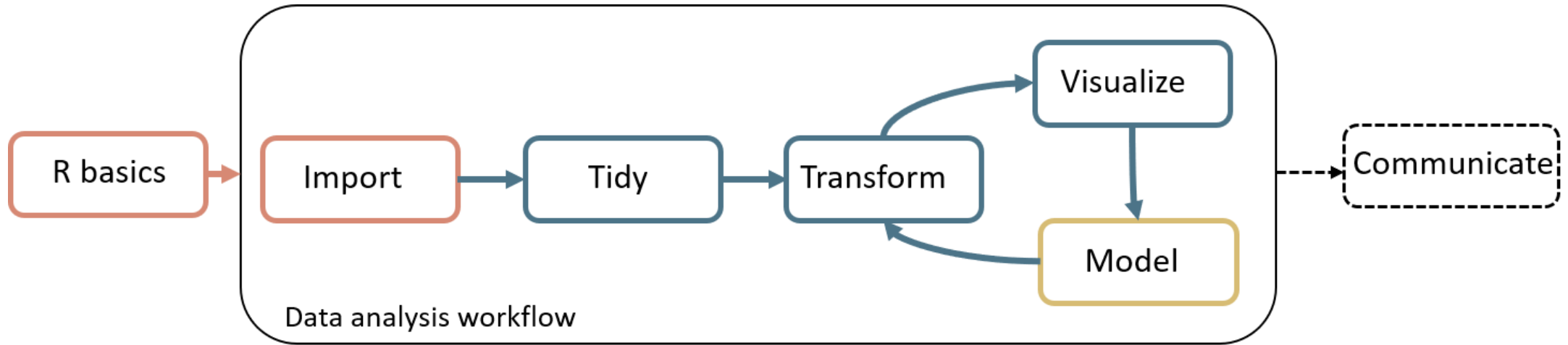
What do I use for?

- Short answer: everything
- Long answer:
 - modelling biocrusts
 - **cleaning data**
 - **visualizing data**
 - writing documents
 - presentations
 - **performing statistical analyses**
 - **wrangling data**
 - workflow automation
 - ...

Who are you?

Results of questionnaire

The Workshop: Topics



Day 1: Introduction to R and RStudio and data import

Day 2: Data analysis with the tidyverse

Day 3: Statistical tests and models with R

Day 4: Bring your own data

The Workshop: Schedule and Organization

🕒 9 a.m. - 4 p.m. (📅 ~ 12 a.m. - 1 p.m.)

🔑 We will meet in the `General` meeting on Webex

Organization

- **input sessions**
 - presentation and demonstration of a topic
 - some examples
- **tasks** regarding this topic
 - solve them in small groups
- **joint discussion** of tasks and additional questions

The Workshop: Material

- All material can be found on the [workshop's website](#)
 - presentations
 - tasks
 - solutions
 - additional resources
- The complete material can be downloaded from the website after the workshop

Bring your own data

Learning by doing

- work on your own research data in small groups (or alone if you prefer)
 - I will also provide some real life data sets from different topics
- use any of the methods from the course or try new things, ...
- present and discuss your results at the end of the day

Bring your own data - preparation

- keep the last workshop day in mind during the next days
 - remember if you learn something that might be applicable to your data
 - think of questions that you would like to answer for your data set
 - during the group work
 - if there is time after the tasks: talk about your data, research questions and methods
- you might already find common interests and questions

Bring your own data - preparation

If you want to **propose a group project** using your data set:

- Add a description of the project idea to the **joint document**
- Prepare your data set to work seamlessly with R
 - We will learn about that today
- If you want: Send the data set to me beforehand then I can make sure that it's easy to get started with

If you want to **work alone** on your data set

- Add your name and the methods that you would like to use to the **joint document**

If you want to **join a group** project

- go through the proposals and add your name next to it

If you want to work on a **data set provided by me**

- add your name to the respective section

Before we get started I

Any feedback and questions are very welcome.

I am curious to know

- what you liked/disliked
- which topics or methods you missed
- which tasks were too easy/too difficult or just right
- ...

Add any feedback to the feedback section of the [joint document](#) whenever something comes to your mind.

Before we get started II

Did anyone have problems installing R and RStudio?



Download and install R from <https://cran.r-project.org>



Download and install RStudio from <https://www.rstudio.com>

Before we get started III

Get familiar with our Webex team for the group work (5 mins):

- Go to your group
- Start a meeting in your group
- Try out the chat
- Make sure that it works for everyone in your group
- Keep an eye on the general chat and come back to the General meeting when I send the message to come back
- If you want: Change the name of your Webex profile to a name you would like to be called
 - Click on your name in the top left corner, go to `Edit Profile` and change your display name