How far R we?

Ida Bonde & Anne Techau Bruun
Statistical Programmers

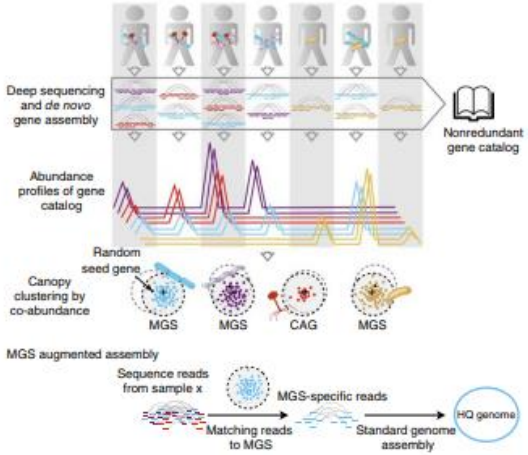
Dermatology
beyond the skin

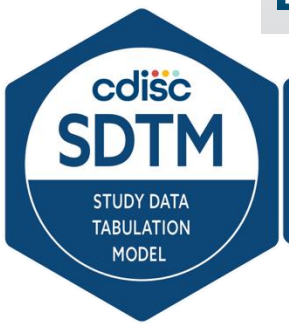
LEO

Skillset needed for adopting R

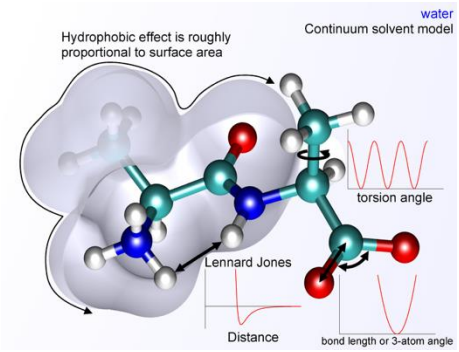
The presenters

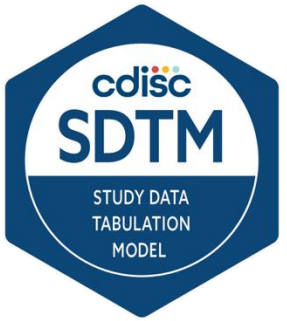
Ida





Anne





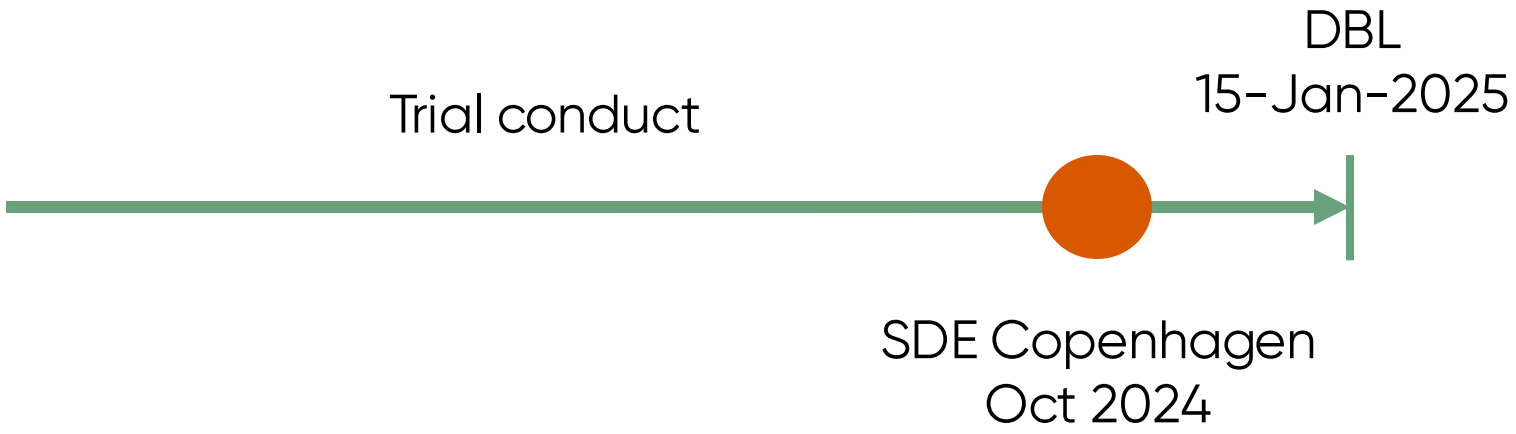
Nielsen HB et al., Identification and assembly of genomes and genetic elements in complex metagenomic samples without using reference genomes. Nat Biotechnol. 2014 Aug;32(8):822-8. doi: 10.1038/nbt.2939. Epub 2014 Jul 6. PMID: 24997787.

By Edboas - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=4194424

The R Foundation, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons

The cliff hanger

Did we make it?



Did we make it?

Trial conduct

DBL
15-Jan-2025

Solution ready for regulatory use
10-Jan-2025

New competencies and many decisions

- How does R and Posit work
- How to validate a system
- How to validate R packages
- How to document
- Coding of an interface R package
  - Wrapper around call to REST API
  - How to create an R package
- Coordination and collaboration
- Scoping – hard, hard scoping

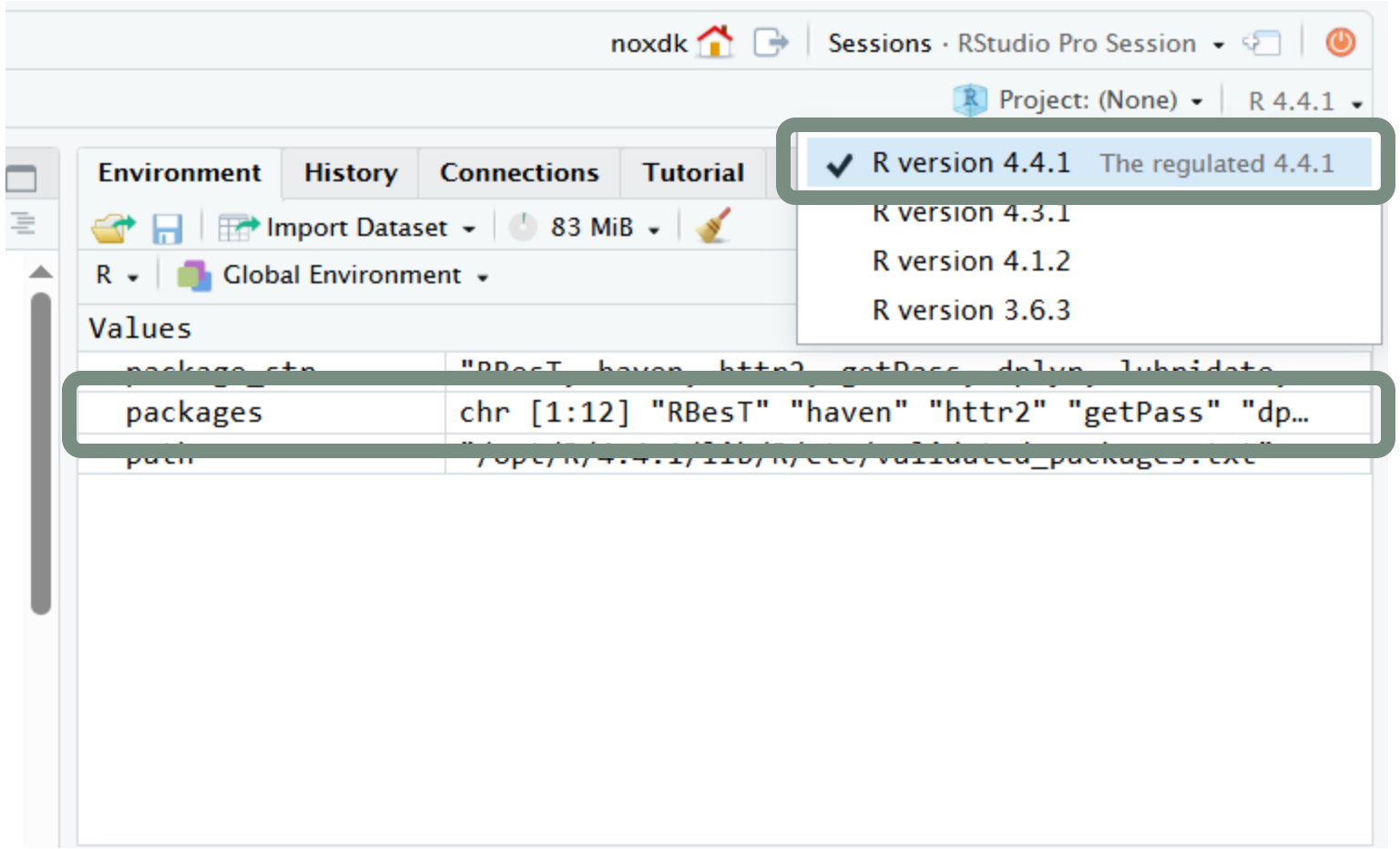
Data in one system – R program in a new

Data in SCE

LSAF interface

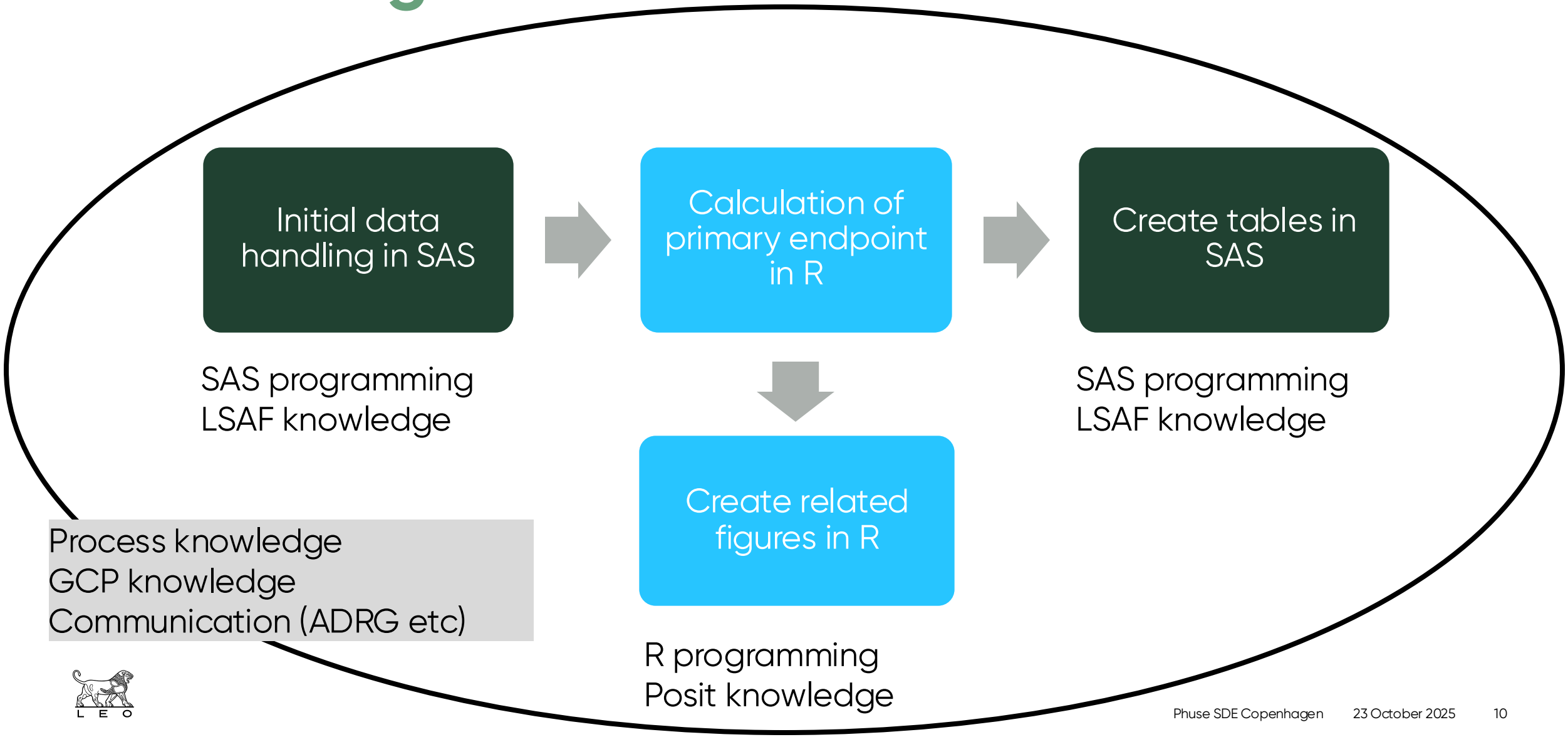
R programming in Posit

Posit – For submission and for exploration

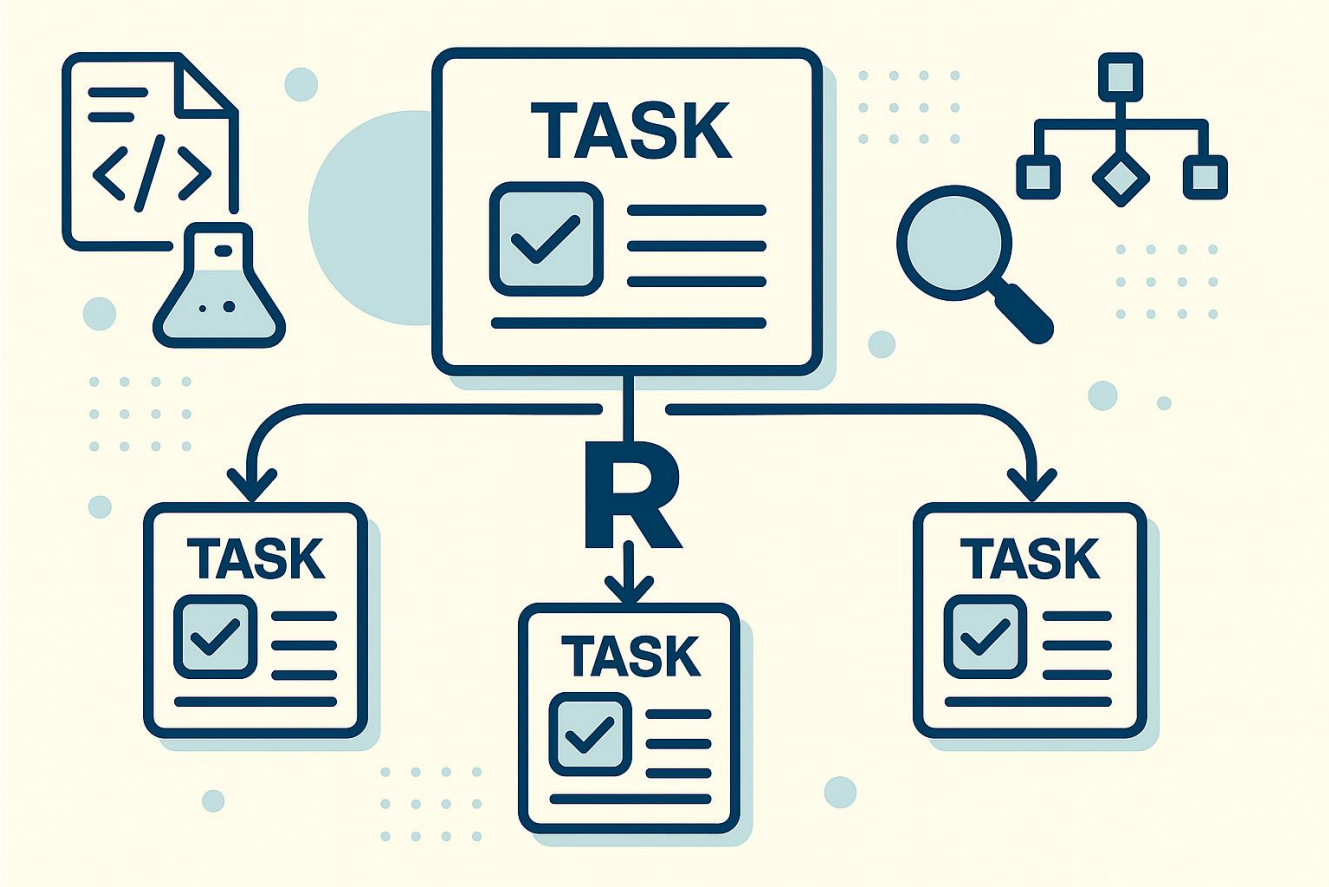


Posit

Combining skills



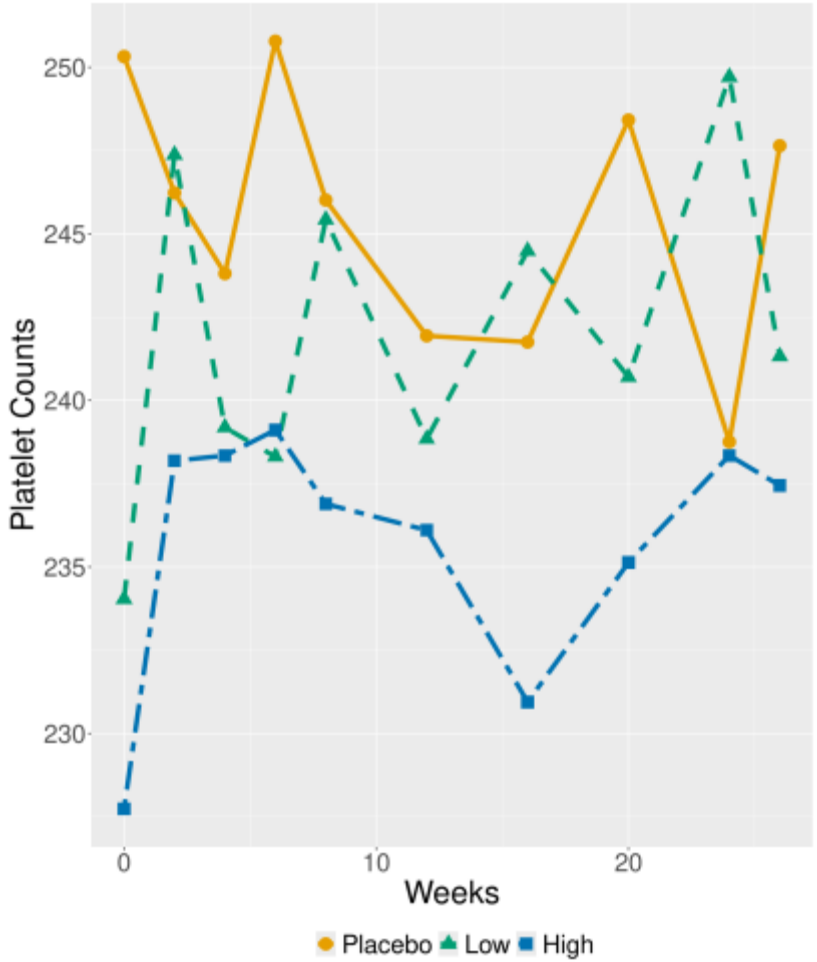
Beyond a single trial



Getting people ready

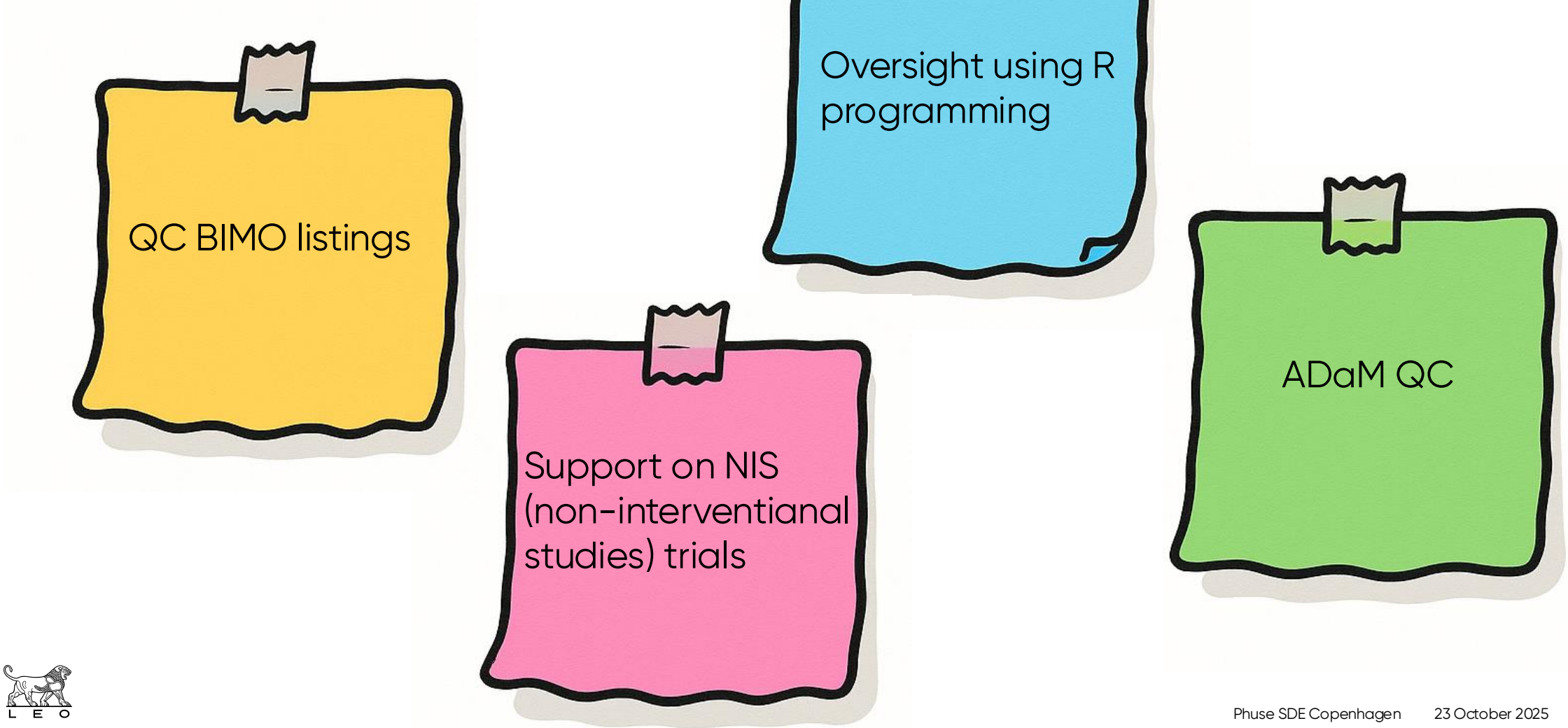
When breaking new ground – train people

- Training targeted at our tasks, using ADaM datasets and well-known variables.
- External consultant performed training
- Focus on use of R in posit, data wrangling, and visualization.
- All interested colleagues. Statistical programming, biostatistics, real world evidence etc.



Put the skills to use

Identify use cases



Put the skills to use

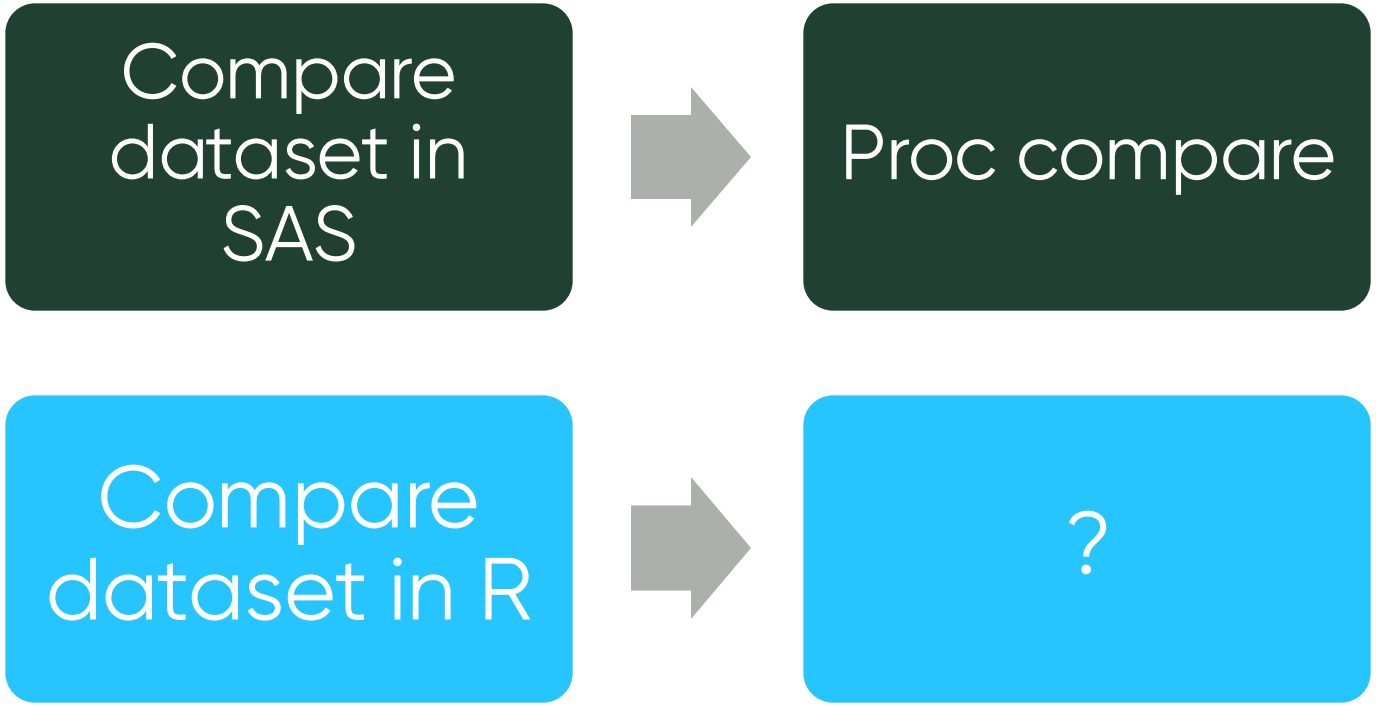
R programming with short list of packages

Put the skills to use

R programming with short list of packages

Put the skills to use

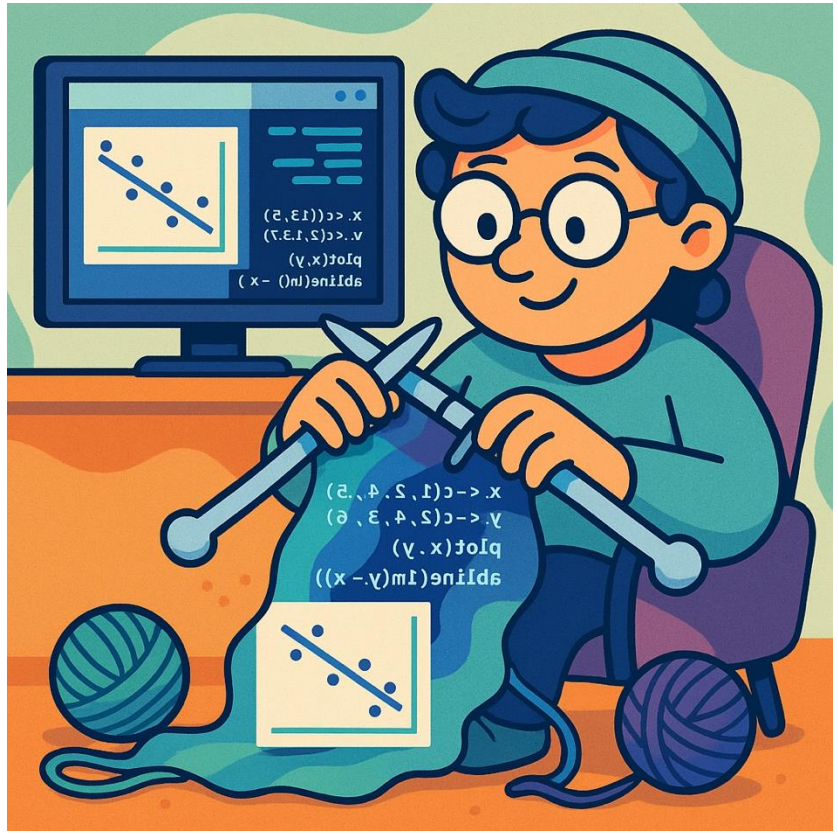
R programming with short list of packages



Put the skills to use

R programming with short list of packages

Compare dataset in R

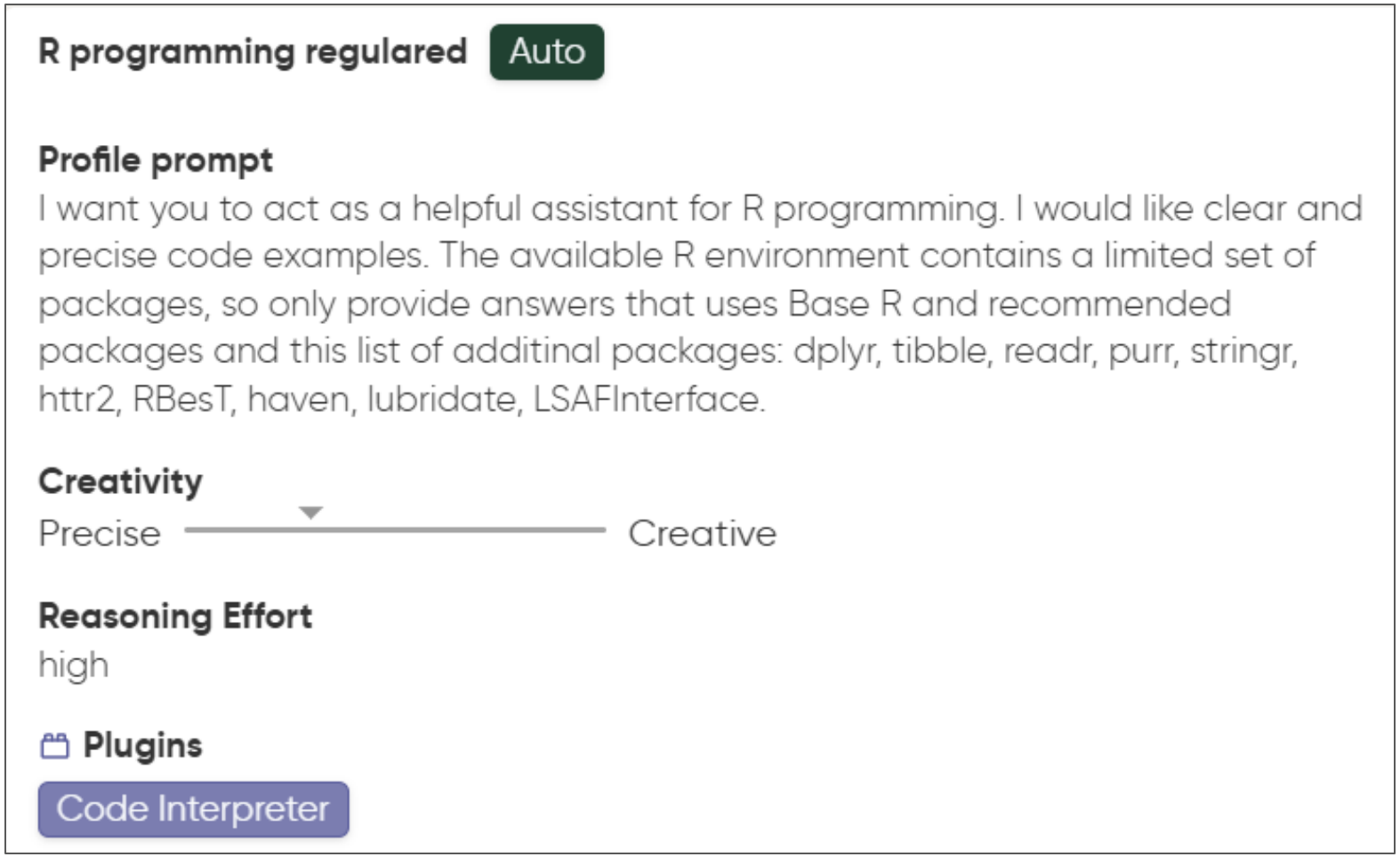


Put the skills to use

LEO AI

Put the skills to use

LEO AI



Put the skills to use

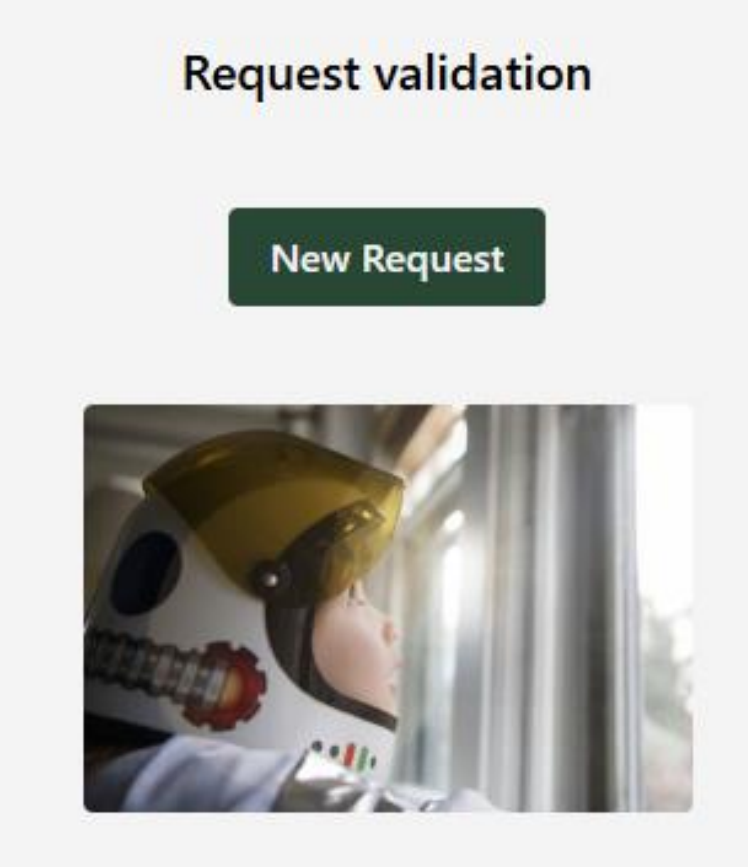
LEO AI

How do I pivot a dataset from long to wide format

1. Using base::reshape (when each id-time pair is unique)

```r
wide1 <- reshape(long,
                 idvar = "id",         # variable identifying rows in wide form
                 timevar = "time",     # variable whose values will become column suffixes
                 direction = "wide")
wide1
# column names will be like value.T1, value.T2, ...
```

Going forward – R package validation



What is out there?

Need to have?

How to verify?

Knowledge of R – best practices SP/Stat

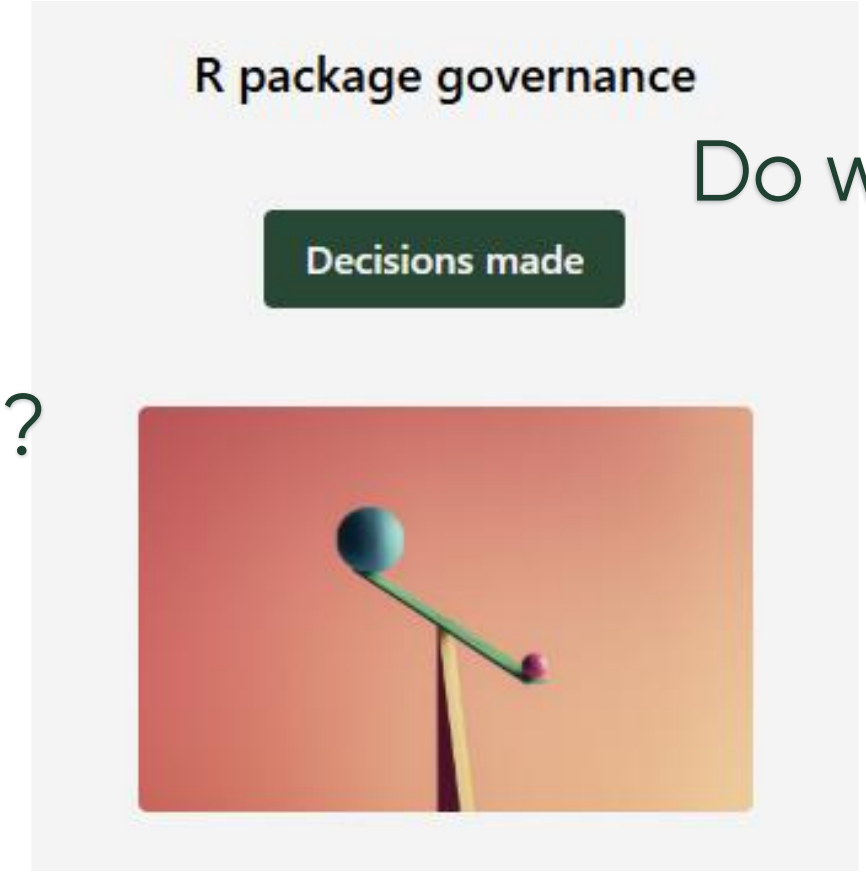
Going forward – R package validation

Which license?

Do we have this already?

Can it be installed?

Resources ?



Licenses – IT feasibility – resources – options

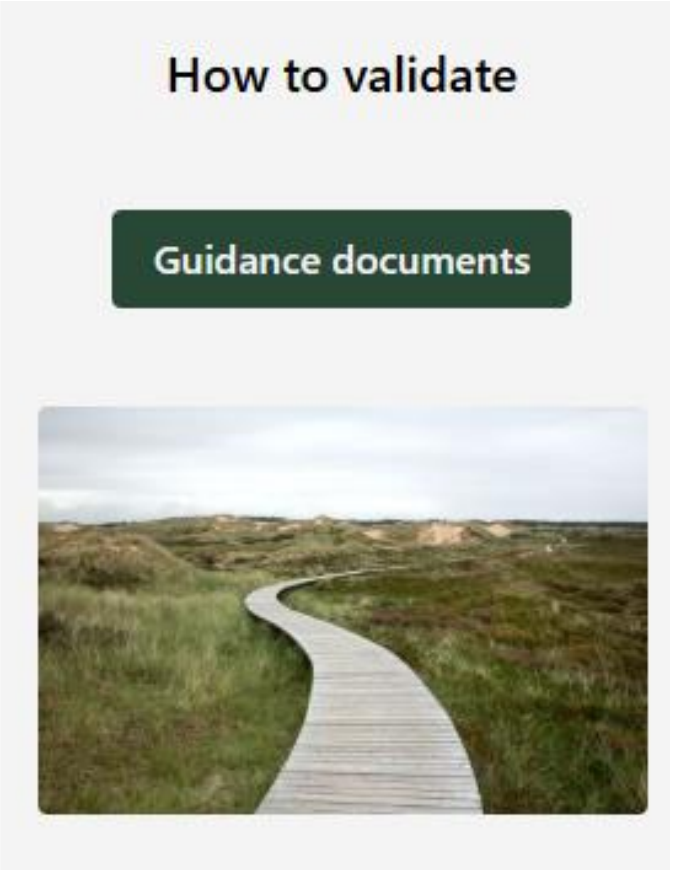
Going forward – R package validation

Impact assessment

Risk assessment

Test scoping

How to test? How to verify?



Going forward – validation

Knowledge of R – best p
Licenses – IT feasibility – reso
Impact and risk assessment – good documentation - scoping

Outlook

- We now have a solution for R programming
- While still utilizing SAS

- We expand the use of AI to help the programmers

- We have more focus on oversight

- We look forward to new adventures and adding even more new skills

Acknowledgement

- Daniel Elenius Madsen
- Frank Vinther
- Henrik Thoning
- Krisztina Boedoes
- Line Conradsen Hjort
- Marta Tomczyk
- Monika Gurbala Marzec
- Niels Hoejsgaard Joergensen
- Parag Naithani
- Per Settergren Soerensen
- Seyedeh Azita Khorshad
- Simone Riis Laursen
- Stine Andreasen Fangel

- Plus former colleagues