Interuniversity Institute for Biostatistics and statistical Bioinformatics

# We a community

## ITP6: International Symposium: Current Trends in Modelling and Software Development in Data Science and Statistics (ISDSS)

Ziv Shkedy

Hasselt University, Belgium

ISDSS 2025

29/06/25-05/07/25

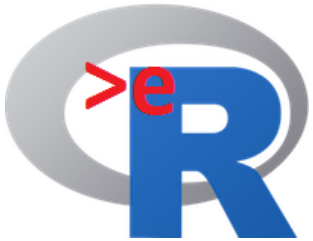
Pretoria, South Africa

Visit us on Facebook ER-BioStat

GitHub https://github.com/eR-Biostat

https://erbiostat.wixsite.com/erbiostat

twitter @erbiostat



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# Not such a short introduction

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SHARING MINDS, CHANGING LIVES

The >eR-BioStat :
short introduction about the ITP collaboration project

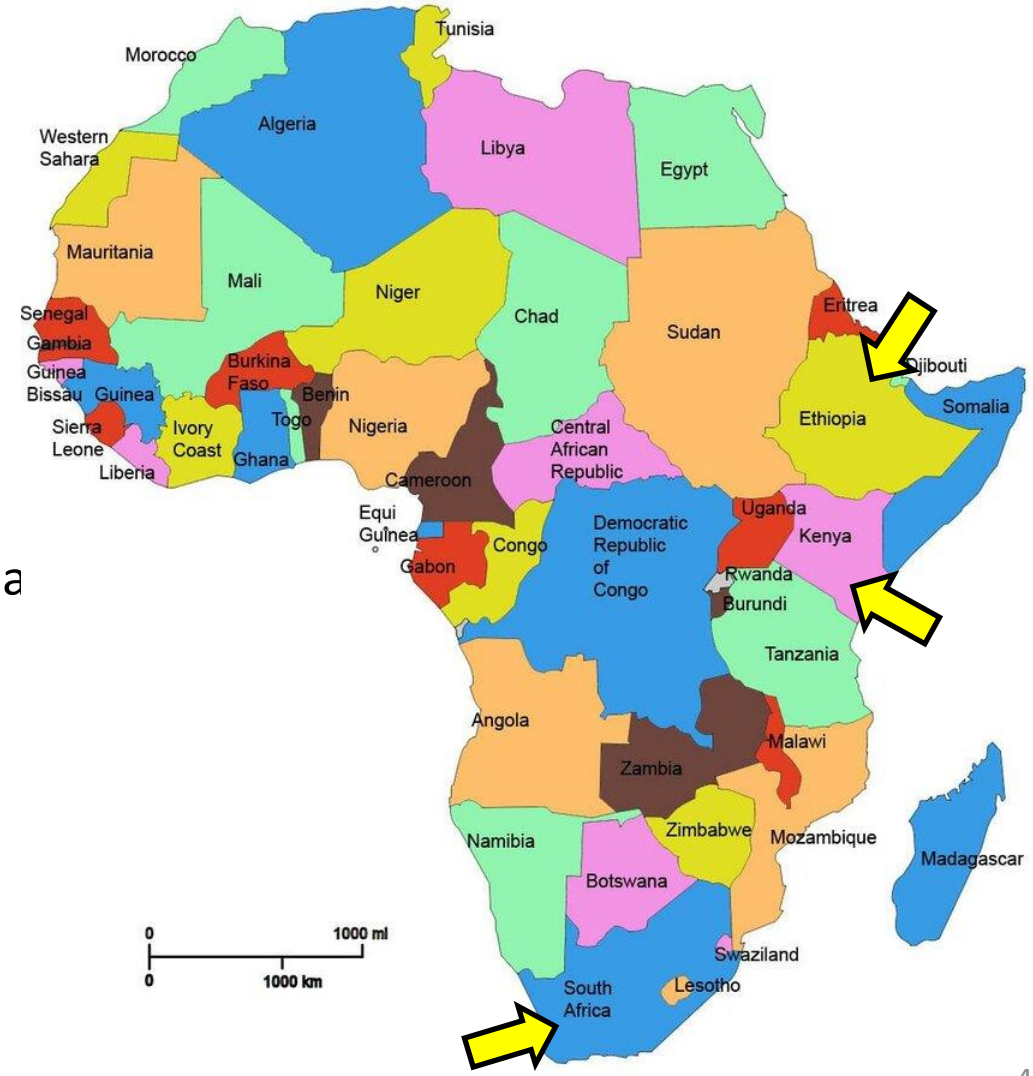
Our new website

**https://erbiostat.wixsite.com/erbiostat**

# Project's structure

- Three years project.
- Three countries:
  - Kenya.
  - Ethiopia.
  - South Africa.
- In total: 14+ Universities & institutes from the three countries.
- International team: USA, Canada Belgium.

- Institutes from other countries are most welcome to join the project !!!



# Project's partners

- Three leading institutes:
  - Moi University.
  - Gondar University.
  - University of Pretoria + SA-MRC, WITs.


Gondar University.
Ambo University,
Debre Berhan University
Arba Minch University.
+others….

Moi University.
Karatina University.
JKUAT.
Masinde Muliro Uni.

University of Pretoria.
MRC-SA.
WITS.
Stellenbosch University.
The University of Venda.
The University of Zululand.

Also partners in SSACAB


# Project's focus

- ITP: International Training Program.
- Focus: Development of (local) E-learning and digital education platforms for (bio)statistics & data science.
- Project's duration: 2024-2026.
- **WE DO NOT DEVELOP A DISTANCE LEARNING PLATFORM !!!**
- We target all levels (in stat & data science) of HE:
  - Undergraduate.
  - Graduate.
  - Courses for PhD schools.
  - Service courses for non statisticians.

# Project's objectives

- Development of (local) networks of universities in Kenya, Ethiopia, South Africa that use the digital platform for statistics & DS.
- Training of local academic staff to create their own contents & websites.
- Establish international network to support local universities.

- The project designed to support young academic staff in universities with education programs in statistics & DS.
- All deliverables are available online (for free).

# Project's deliverable

- A Local version of the >eR-BioStat website.
- Updated global version of https://erbiostat.wixsite.com/erbiostat.
- "Editorial board" for the website.

- A Local version: we would like to develop (1) a SSACAB version of the platform and (2) a SSACAB partner(s) local version.

- See some examples later.

# Project's activites

- Three academic years: 23/24, 24/25 & 25/26.
- Workshops:
  - ~~First workshop: Gondar Uni, Ethiopia (14/08/2023).~~
  - **Second workshop: SA-MRC, cape town (end of February 24: workshop + conference).**
  - ~~Third workshop: Moi.~~
  - **VISAYAS state university: the Philippines.**
  - **Hanoi Medical University, Vietnam.**
  - **Moi Uni, Kenya.**
  - **University of science and technology, Hanoi, Vietnam.**
  - ITP 6 — Uni. of Pretoria, South Africa.
  - Moi University, Kenya.
  - SUSAN 2025.
  - …
  - …
  - …

Academic year 24/25.

Academic year 24/25.

Academic year 25/26.

The ITP project's website:

https://erbiostat.wixsite.com/itpa0

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The >eR-BioStat :
a short introduction and main concepts

Our new website

https://erbiostat.wixsite.com/erbiostat


# Digital education & E-learning

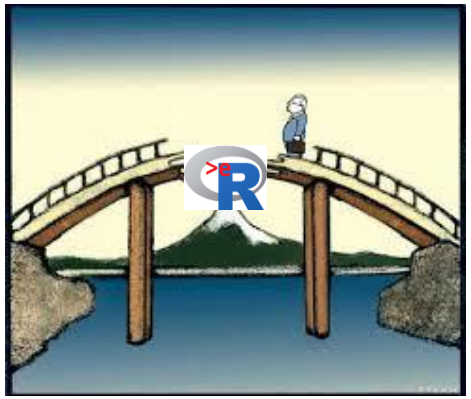
- We DO NOT develop online education program but we develop online materials for on campus education.

- The E-learning Initiative aims to support on campus programs by:
  - Develop accessible course materials in (bio)statistics.
  - Focus on **all education levels**:
    - Undergraduate & master programs, PhD schools.
    - Statisticians & non statisticians.
  - Bring students and teachers costs to minimum by providing **free, high quality and applied** course materials.

# We a community

- Build up communities (in south & north).
- Create a bridge between communities:

Academic staff and students in the south.



Development of E- learning capacity

Academic staff in the south & north.

# Concepts

- The E-learning system consists of few components:

1. All course materials are available to the students/teachers online to download (for free).
   - Can be used online or offline.

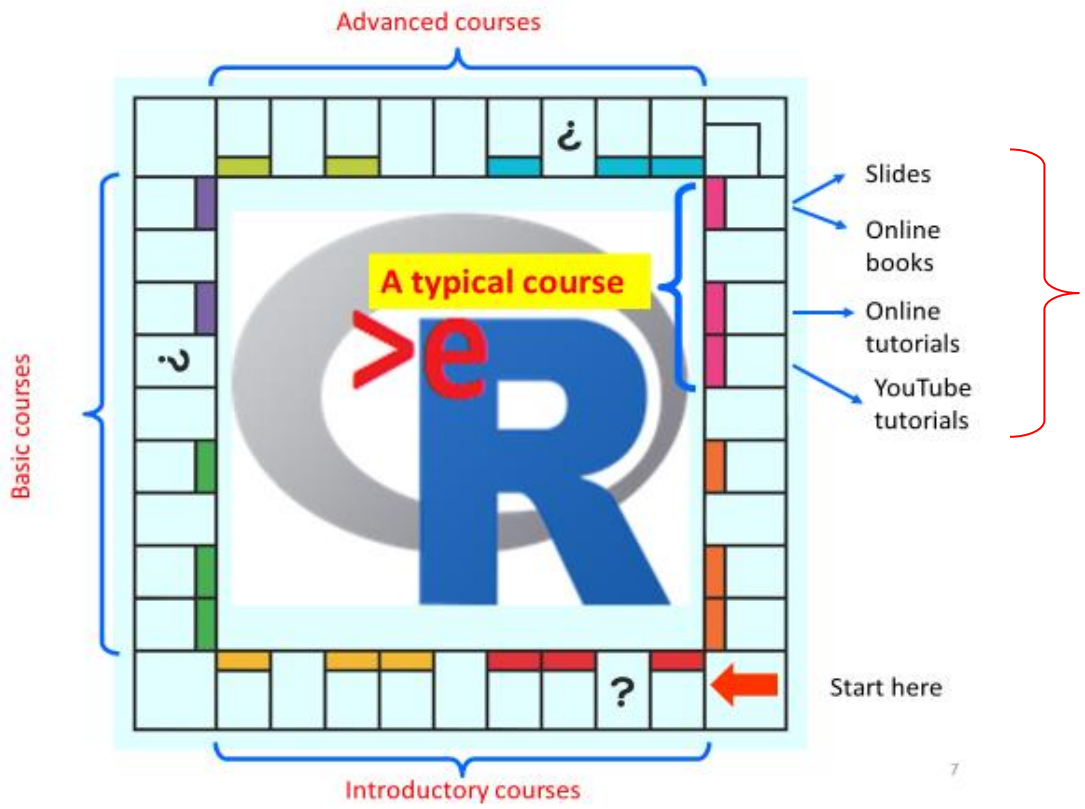
2. Selected courses (in stat & data science) were/will be developed.

3. Courses can be used either as a complete course or a part of a course or a short course.

4. Courses developed up to a class level, i.e. courses are ready to be given in the class.

# Typical course structure

- Courses in three levels: introductory, basic & advanced.
- What does it means “fully develop a course…” ?




- Course materials are ready to be used in class.
- Open source policy !!!

# Our approach (1): free and publically available

- **Reduce costs to zero !!!** ⇨ **Very relevant these days !!!!!**
- Use publicly available products:
  - Storage course materials: GitHub (https://github.com/).
  - Website development: WIX (https://www.wix.com/).
  - Software: mostly publicly available software.
  - For example:
    - R (https://www.r-project.org/).
    - Python (https://www. python.org/).

} All publically available products.

⇩

- Free for users(=students/teachers in the south):
  - No password.
  - No registration.

# Our approach (2):
## open source

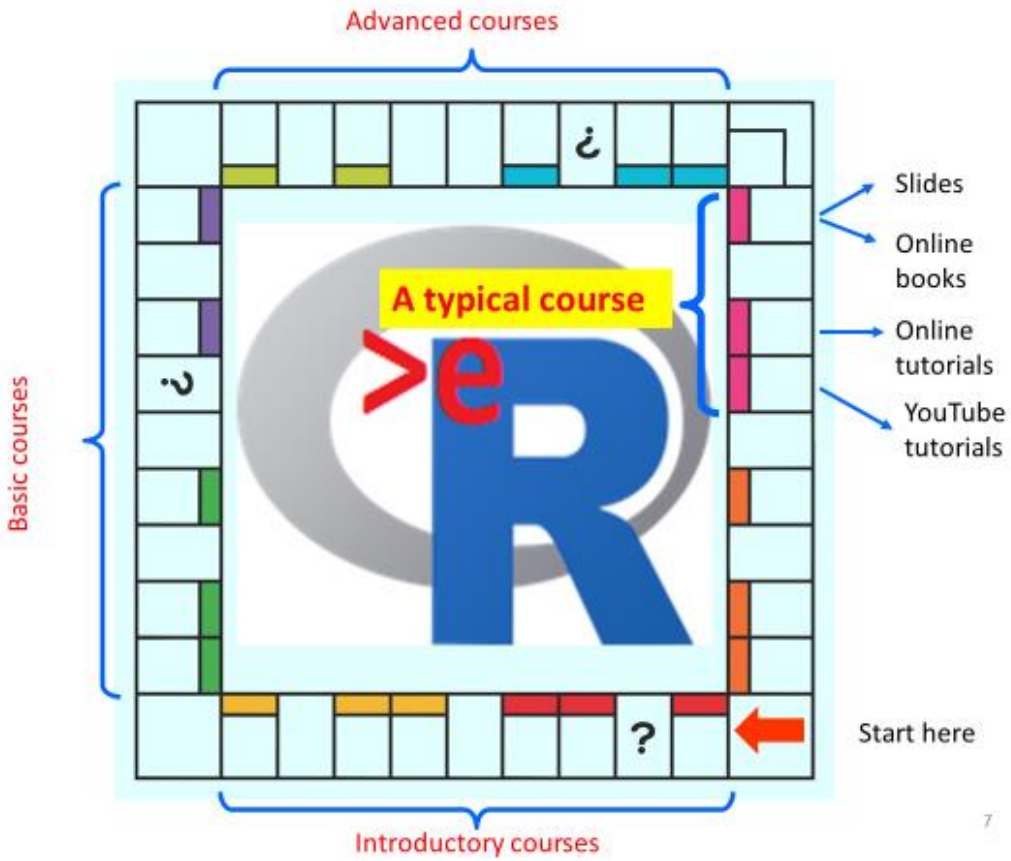
- For a given course, everything is available for free:
  - Slides for the class (pdf).
  - Source files to make the slides (PP, Tex, Rmd…) !!!
  - YouTube tutorials.
  - Software programs for the examples in the course.

All publicly available.

- **Free** for users:
  - No password.
  - No registration.
- 100% sustainable !!!

- In the workshop we train the participants:
  - How to use the source files.
  - How to create their own version of the source files.
  - ➡ Local version of the course.

# Our approach (3): Communities




- All source materials are available for FRRE online.
- Everybody can download and use.

- Course materials can be adapted by the users for the local needs.

- Communities of users: students & teachers in the south & ….
- Communities of developers: in both south & north.

The >eR-BioStat : where to find us ?

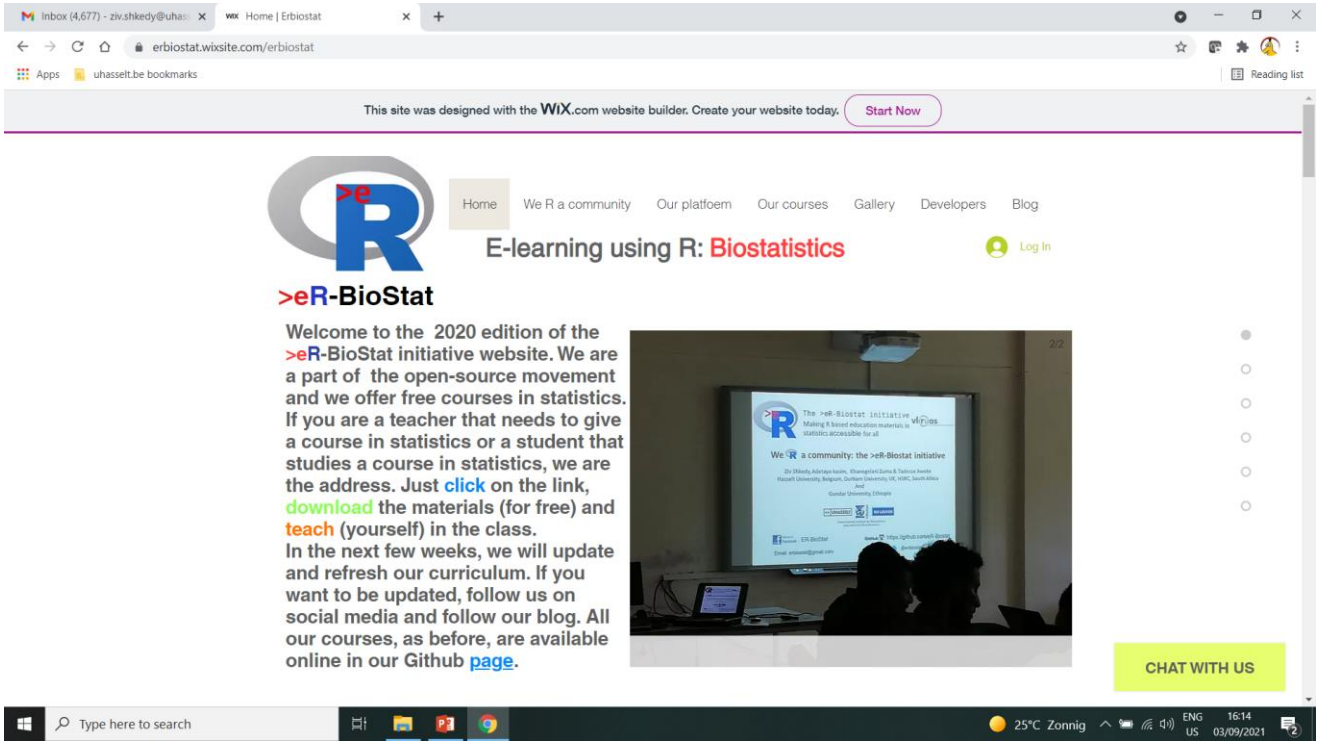
Our new website

https://erbiostat.wixsite.com/erbiostat

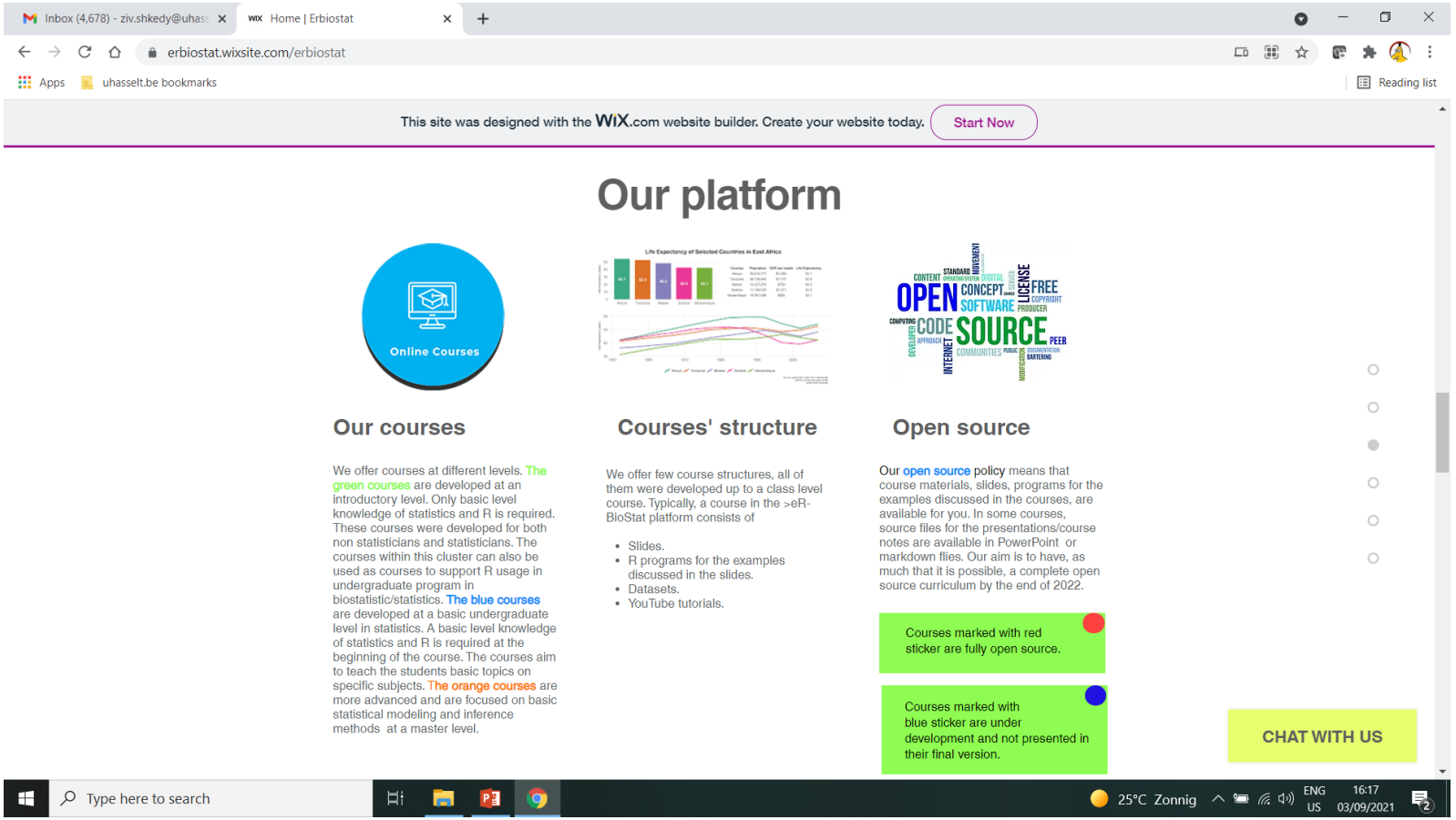
# We R online

- We provide an online and free platform:

https://erbiostat.wixsite.com/erbiostat



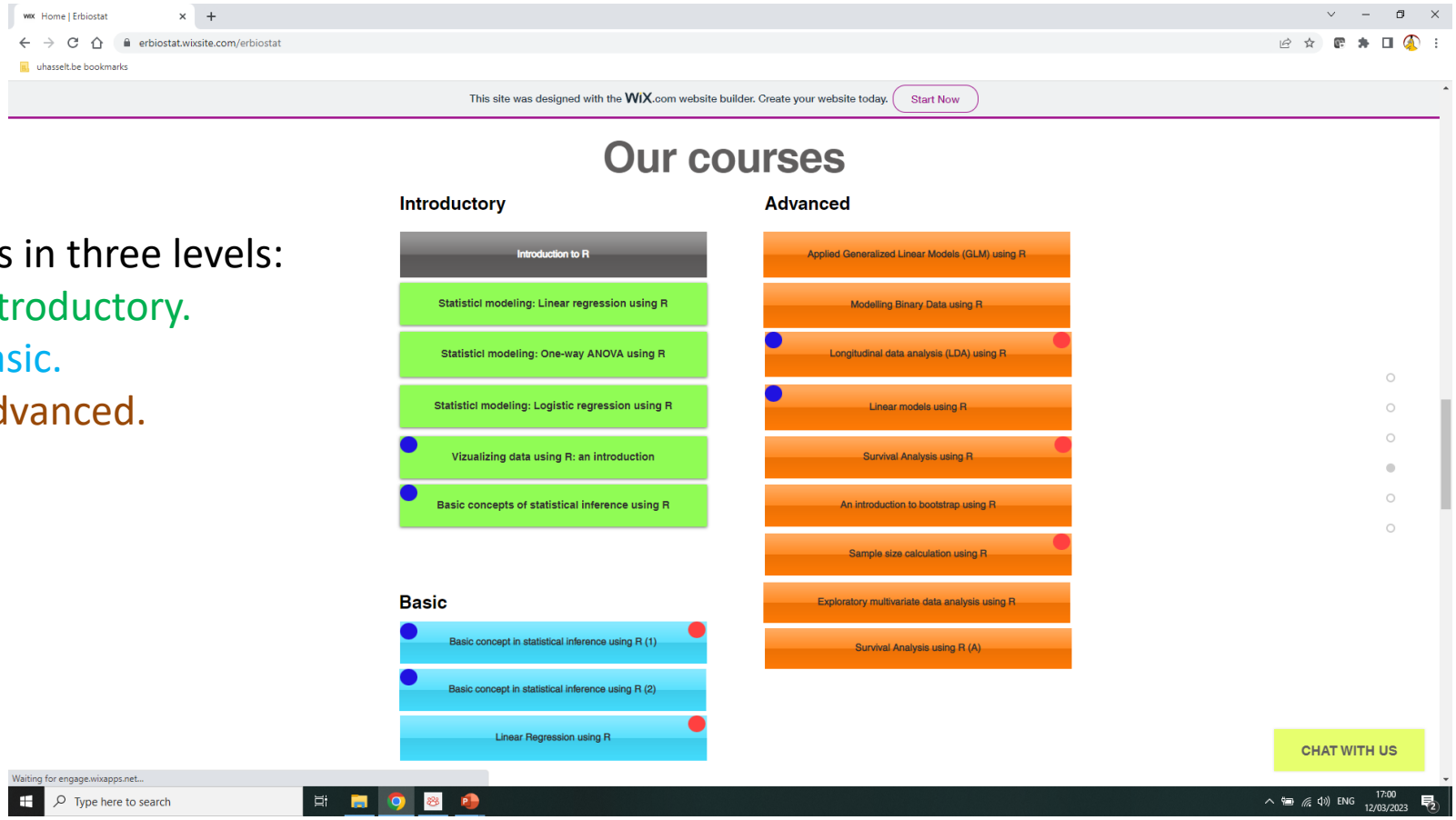
# Open source




- We provide the source files for the courses:
  - PPT/Tex/Rmds for slides.
  - Rmds and R programs.

# Our courses

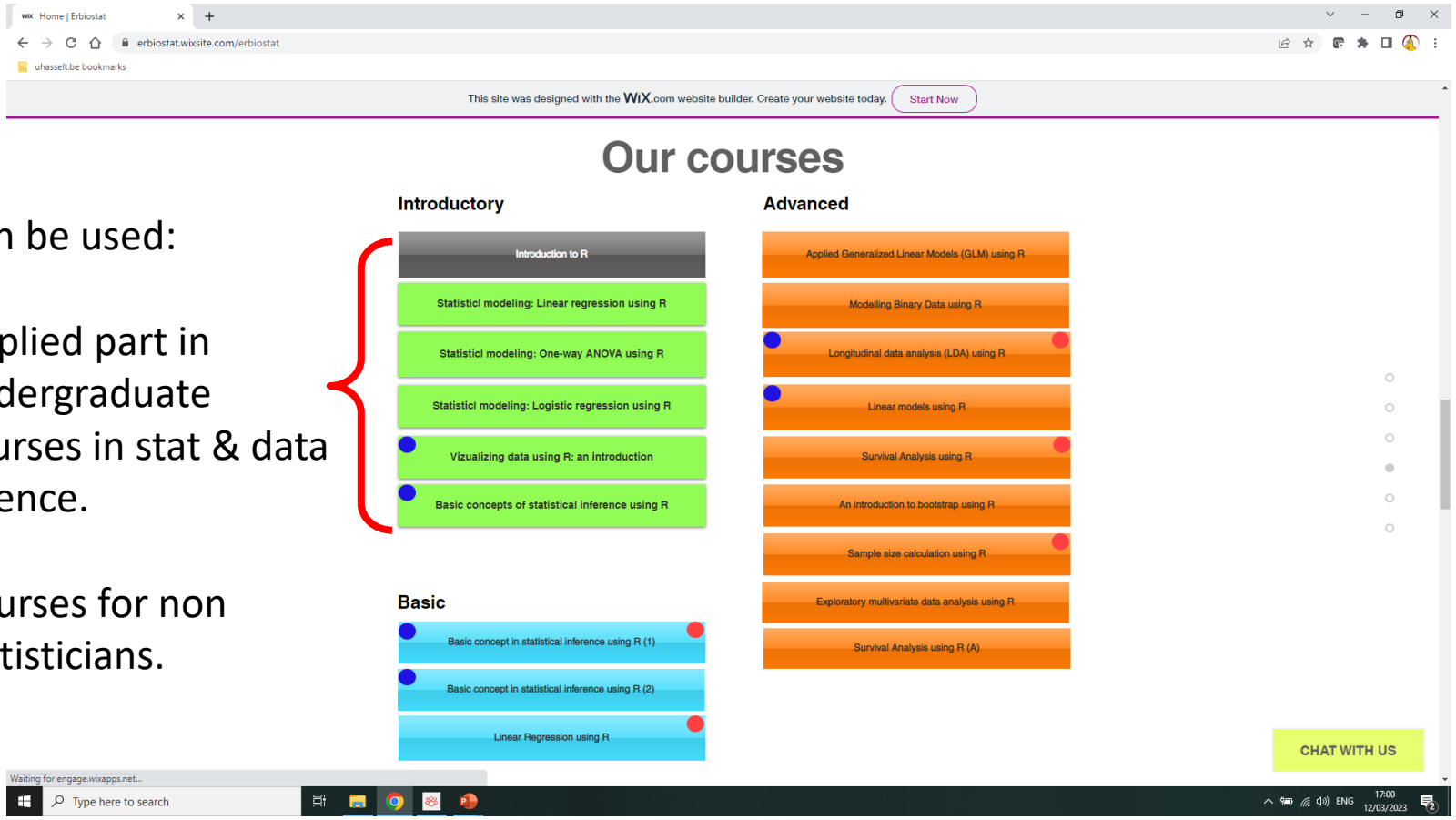
- Courses in three levels:
  - Introductory.
  - Basic.
  - Advanced.




- Target for September-December 2027: all courses are ready to be given in class.
- To select a course: click on the course name.

# Our courses: users

- Can be used:
- Applied part in undergraduate courses in stat & data science.
- Courses for non statisticians.




https://erbiostat.wixsite.com/erbiostat

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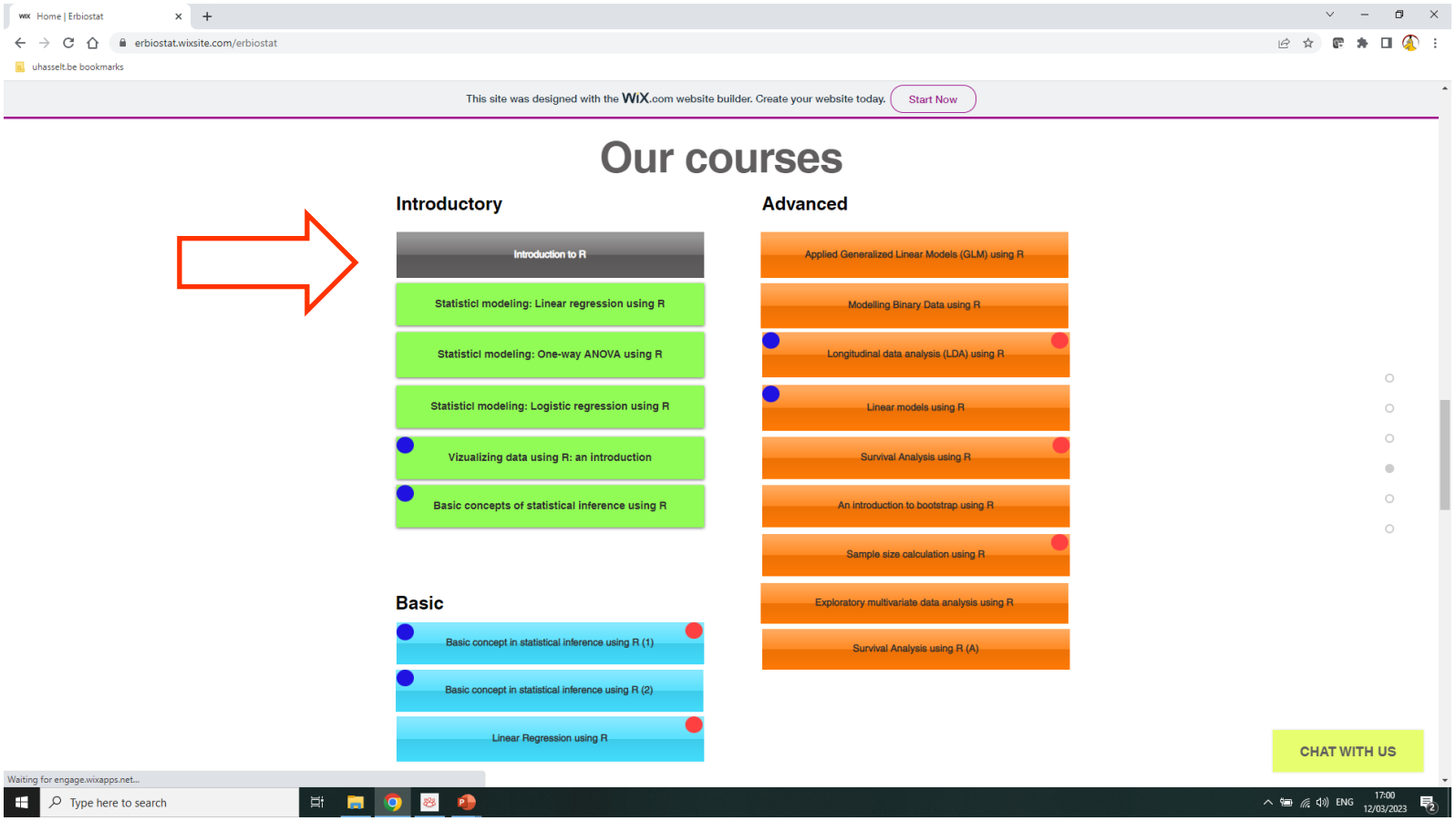
The >eR-BioStat : example of one course

Introduction to R

Our new website

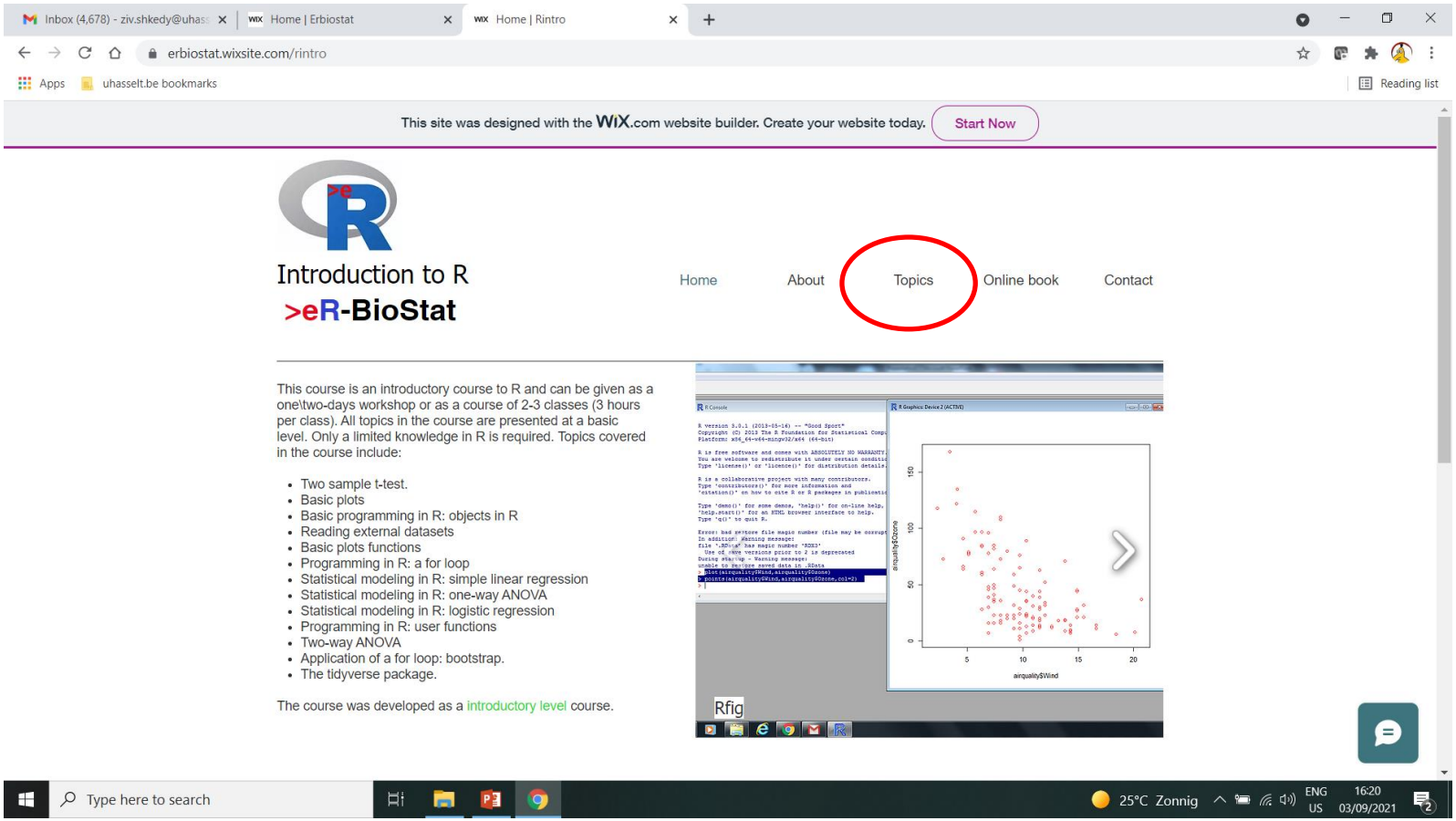
https://erbiostat.wixsite.com/erbiostat

# Example: introduction to R



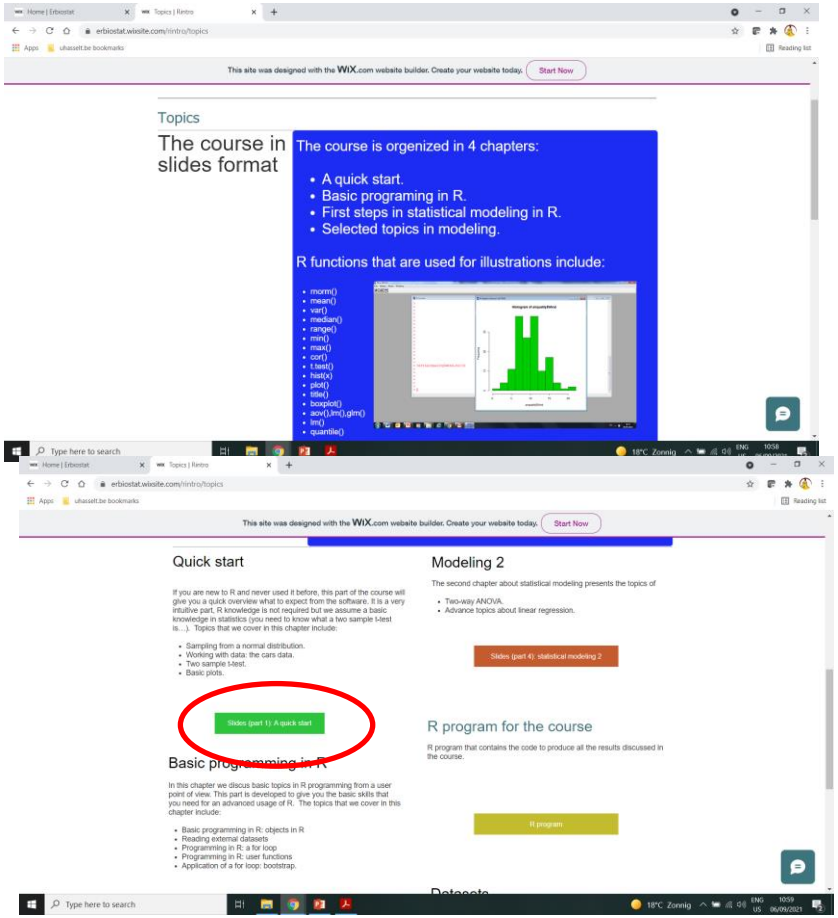

https://erbiostat.wixsite.com/erbiostat

# Example: introduction to R



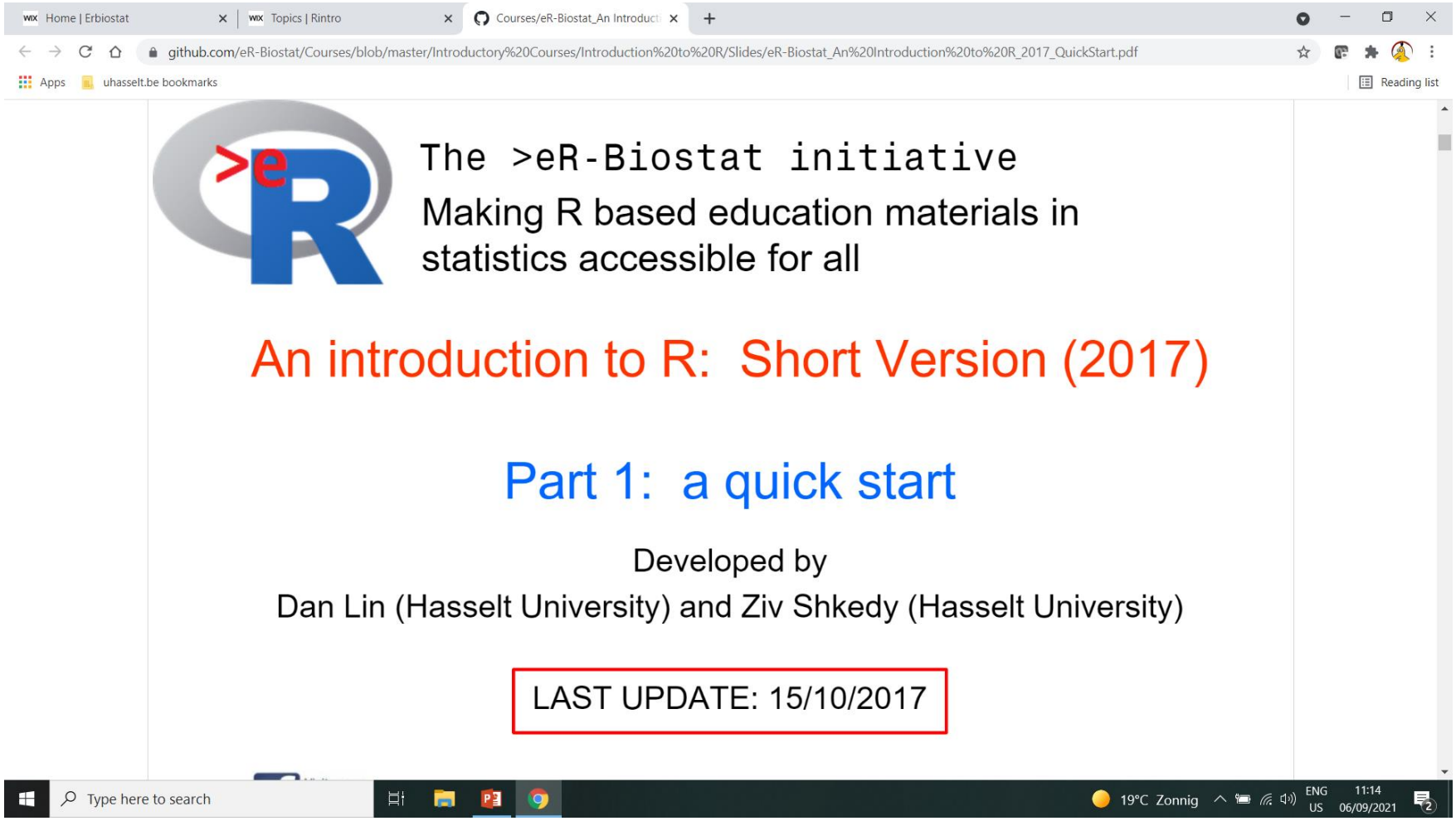

https://erbiostat.wixsite.com/rintro

# Slide format (in “Topics”)

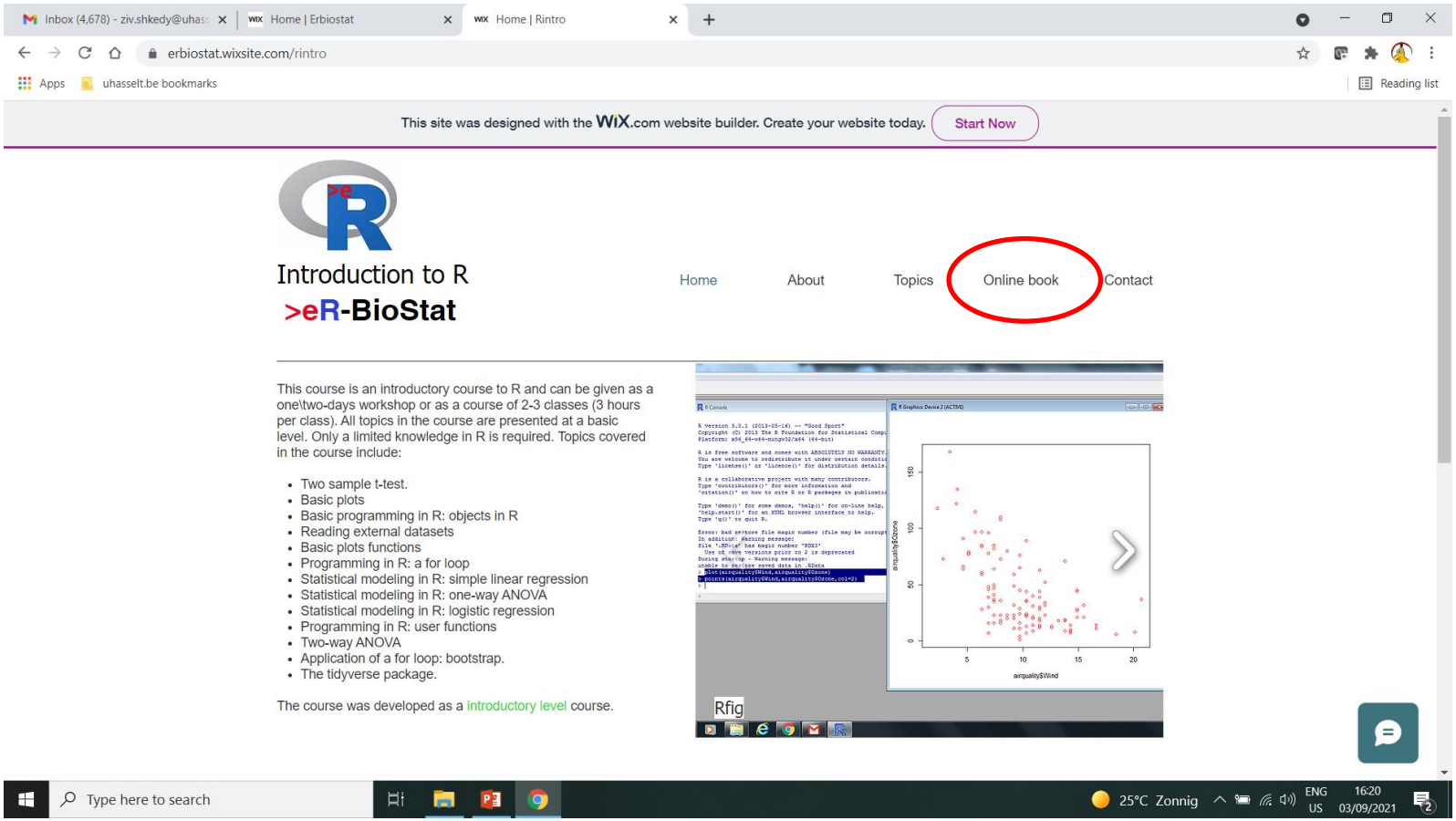



- The course in a usual slides format:
  - Slides (PDF).
  - Slides (Power point).
  - R program to produce the results presented in the slides.

# Slide format (PDF)



# Online book


Inbox (4,678) - ziv.shkedy@uhas
Home | Erbiostat
Home | Rintro
erbiostat.wixsite.com/rintro
Apps
uhasselt.be bookmarks
Reading list
This site was designed with the WiX.com website builder. Create your website today.
Start Now
Introduction to R
>eR-BioStat
Home
About
Topics
Online book
Contact
This course is an introductory course to R and can be given as a one\two-days workshop or as a course of 2-3 classes (3 hours per class). All topics in the course are presented at a basic level. Only a limited knowledge in R is required. Topics covered in the course include:
Two sample t-test.
Basic plots
Basic programming in R: objects in R
Reading external datasets
Basic plots functions
Programming in R: a for loop
Statistical modeling in R: simple linear regression
Statistical modeling in R: one-way ANOVA
Statistical modeling in R: logistic regression
Programming in R: user functions
Two-way ANOVA
Application of a for loop: bootstrap.
The tidyverse package.
The course was developed as a introductory level course.
Rfig
airquality$Ozone
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US
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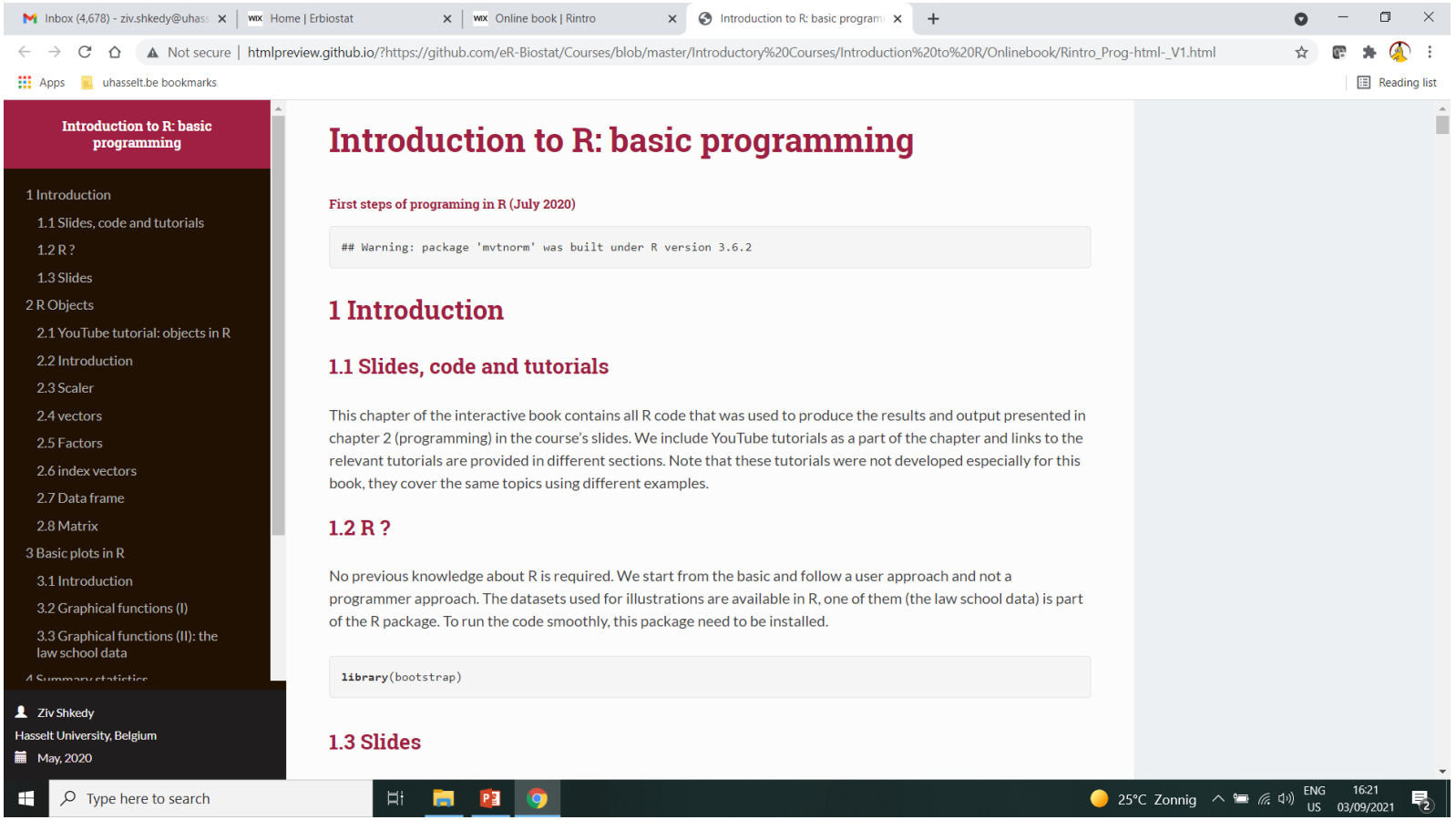
03/09/2021

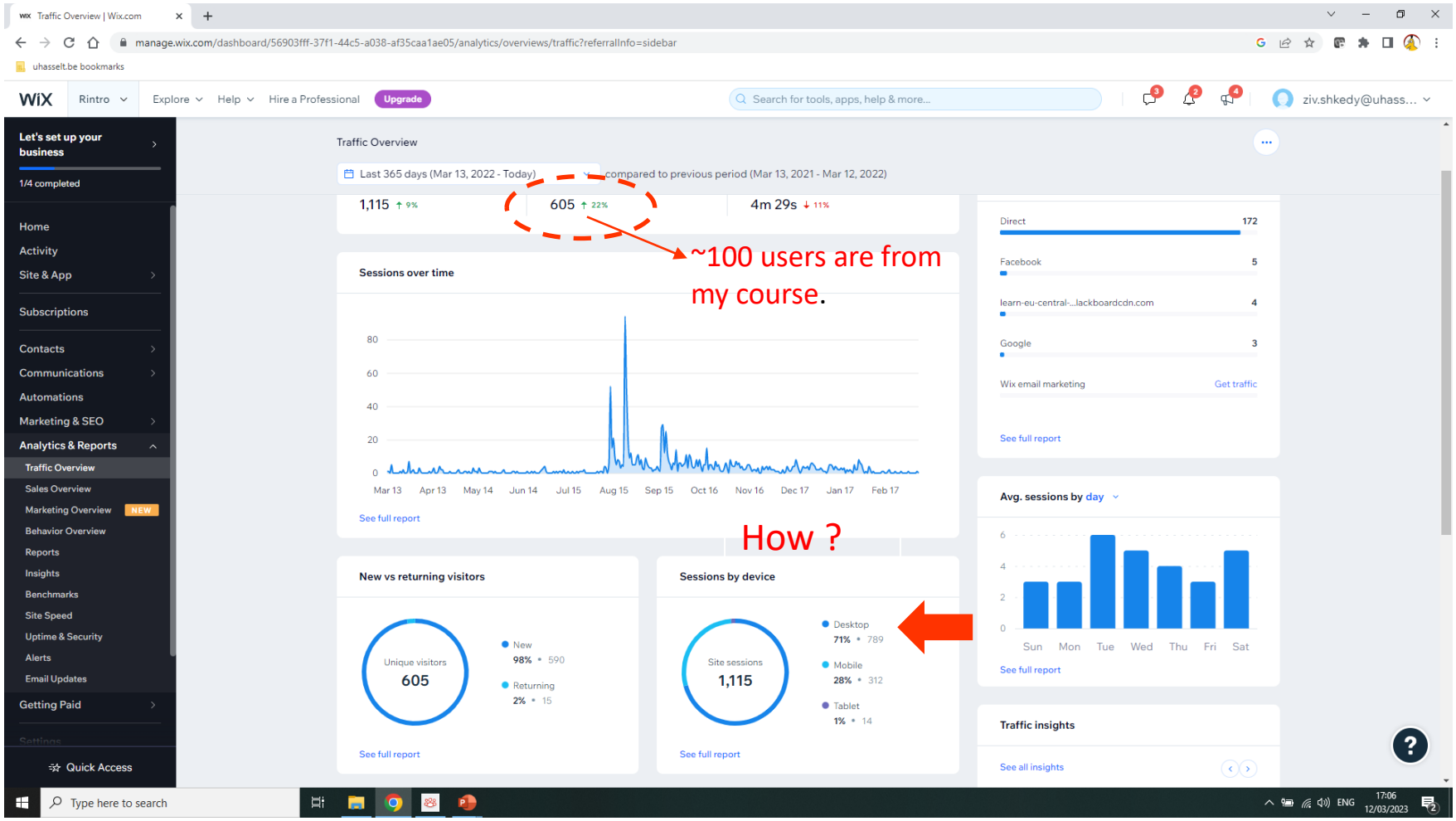
# Online book




- Available in
  - HTML.
  - PDF.
  - Rmd to reproduce the book on your laptop.

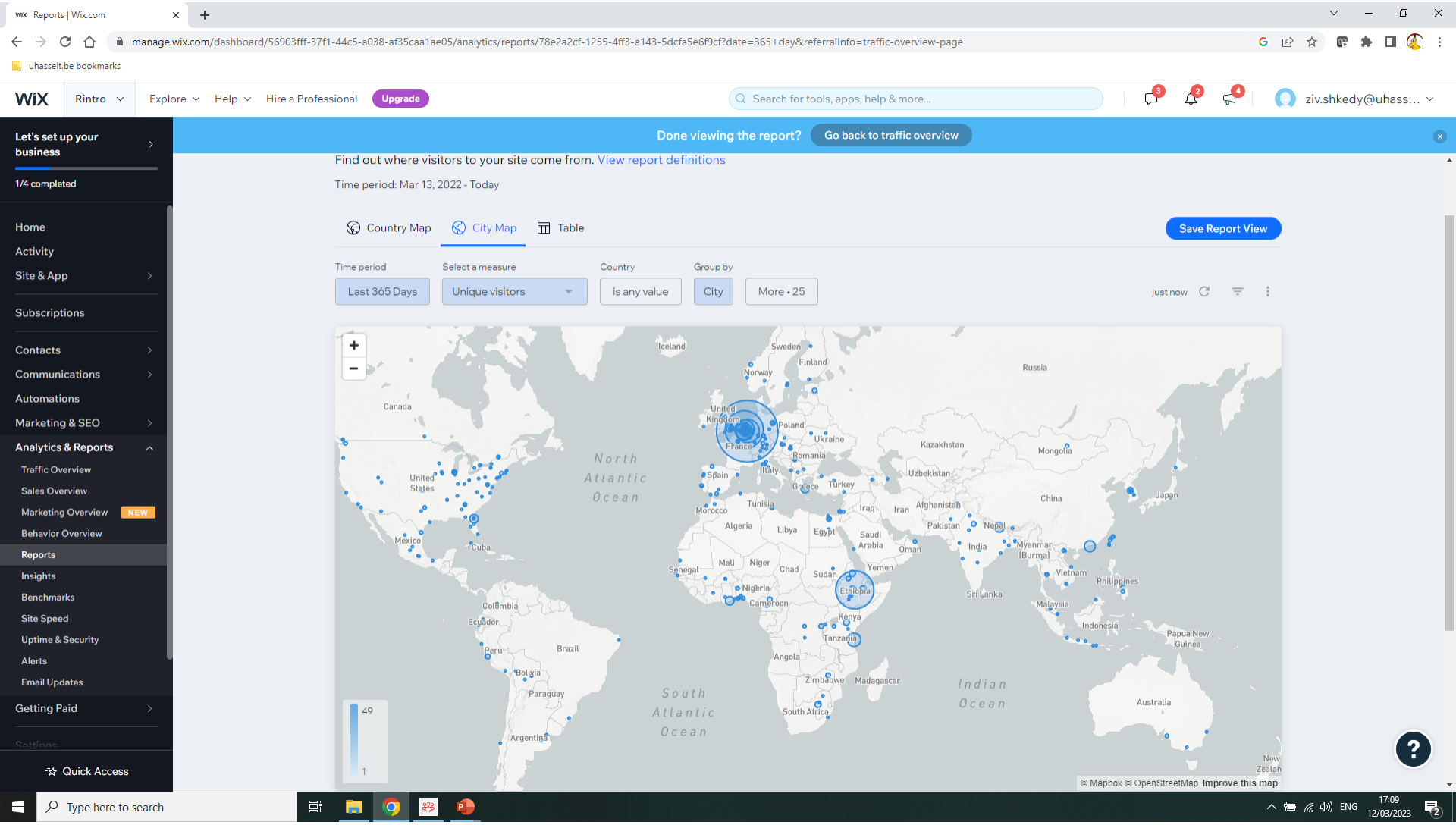
# R course: users in the last 365 days

13/03/2022-12/03/2023:605 users.



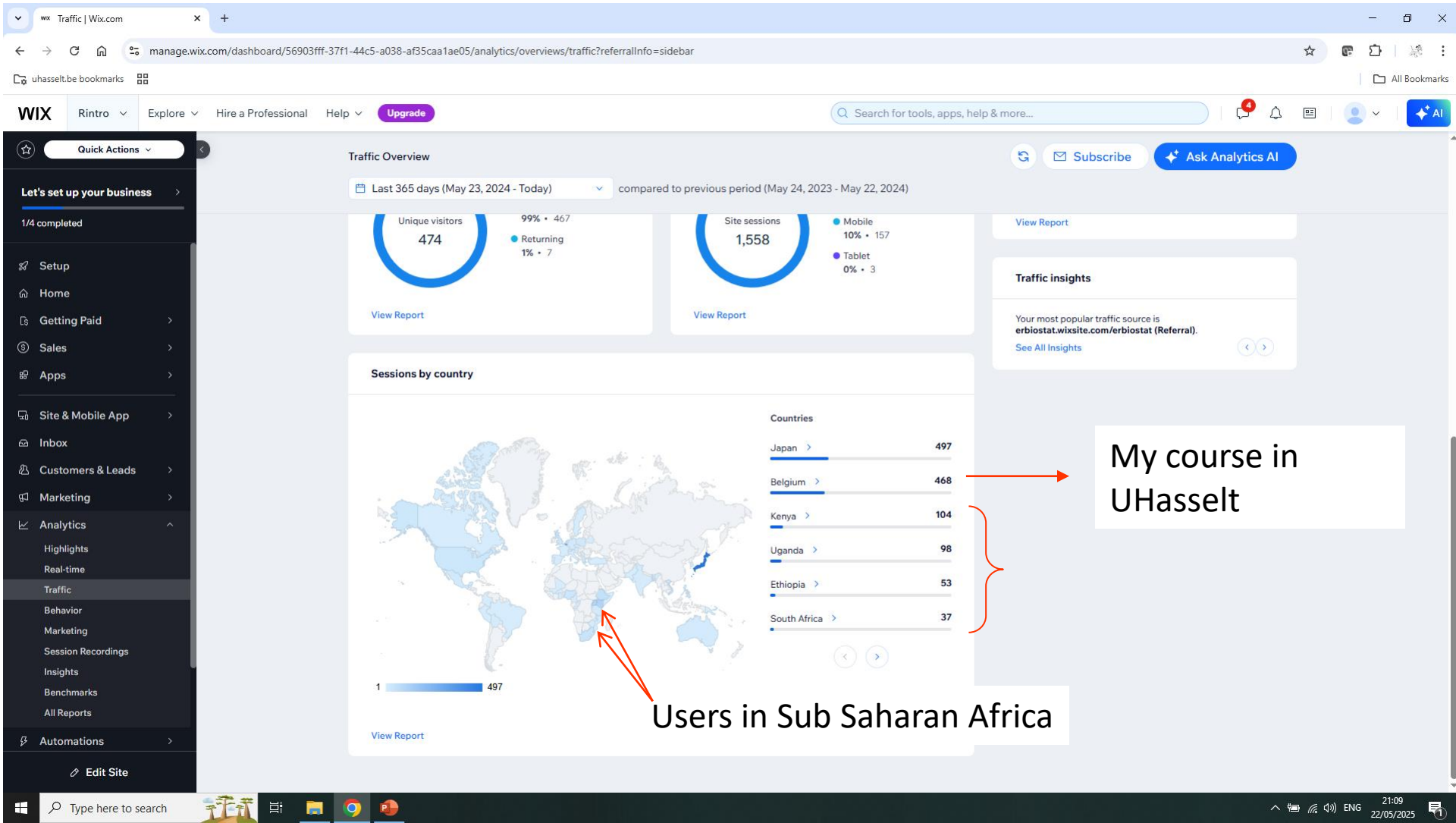
# Who are our users? (Introduction to R)

13/03/2022-12/03/2023: 605 users.



# Who are our users? (Introduction to R)

Last 365 days: **1558** users.



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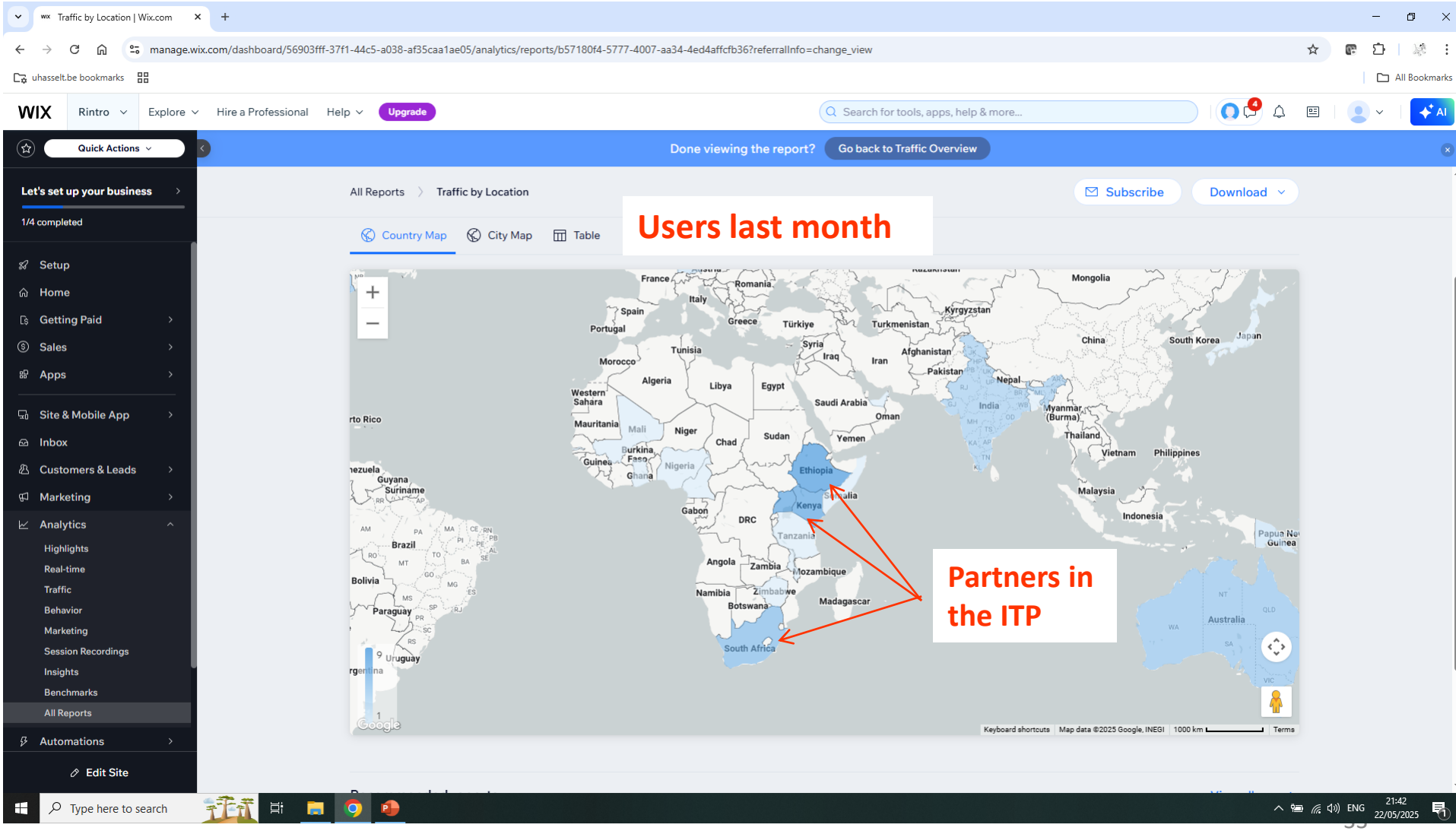

# Stay connected

Interuniversity Institute for Biostatistics and statistical Bioinformatics

- Network event (online) on **September 2025 & February 2026**.
- Aim: to establish collaboration network for research and education development in (bio)stat & data science.
- 09:00-12:30.
- Link for free registration: TBA

- Follow us on social media:

Visit us on Facebook ER-BioStat & twitter @erbiostat

# Stay connected

Interuniversity Institute for Biostatistics and statistical Bioinformatics

- Look for more examples & courses in our website:

  https://erbiostat.wixsite.com/erbiostat

- Users:
  - Want to take part in our initiative ?
  - Want to include your university in our initiative ?
  - Want to use our courses for your classes ?
- Developers:
  - Want to contribute a course for this initiative ?
- Send us an email !!!

  ziv.shkedy@uhasselt.be

- Follow us on social media:

Visit us on Facebook ER-BioStat & twitter @erbiostat

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# Global and local website ?

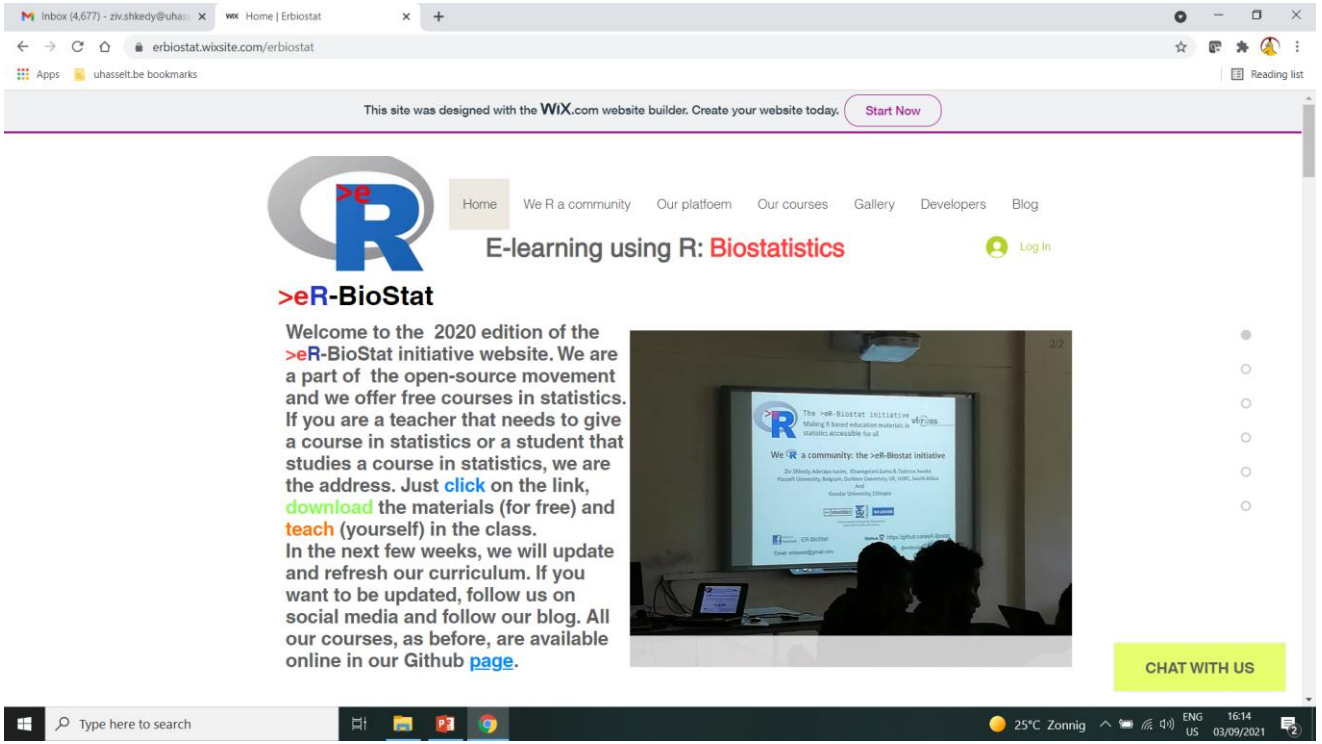
Our new website

https://erbiostat.wixsite.com/erbiostat

# We R online: the global website

- We provide an online and free platform:

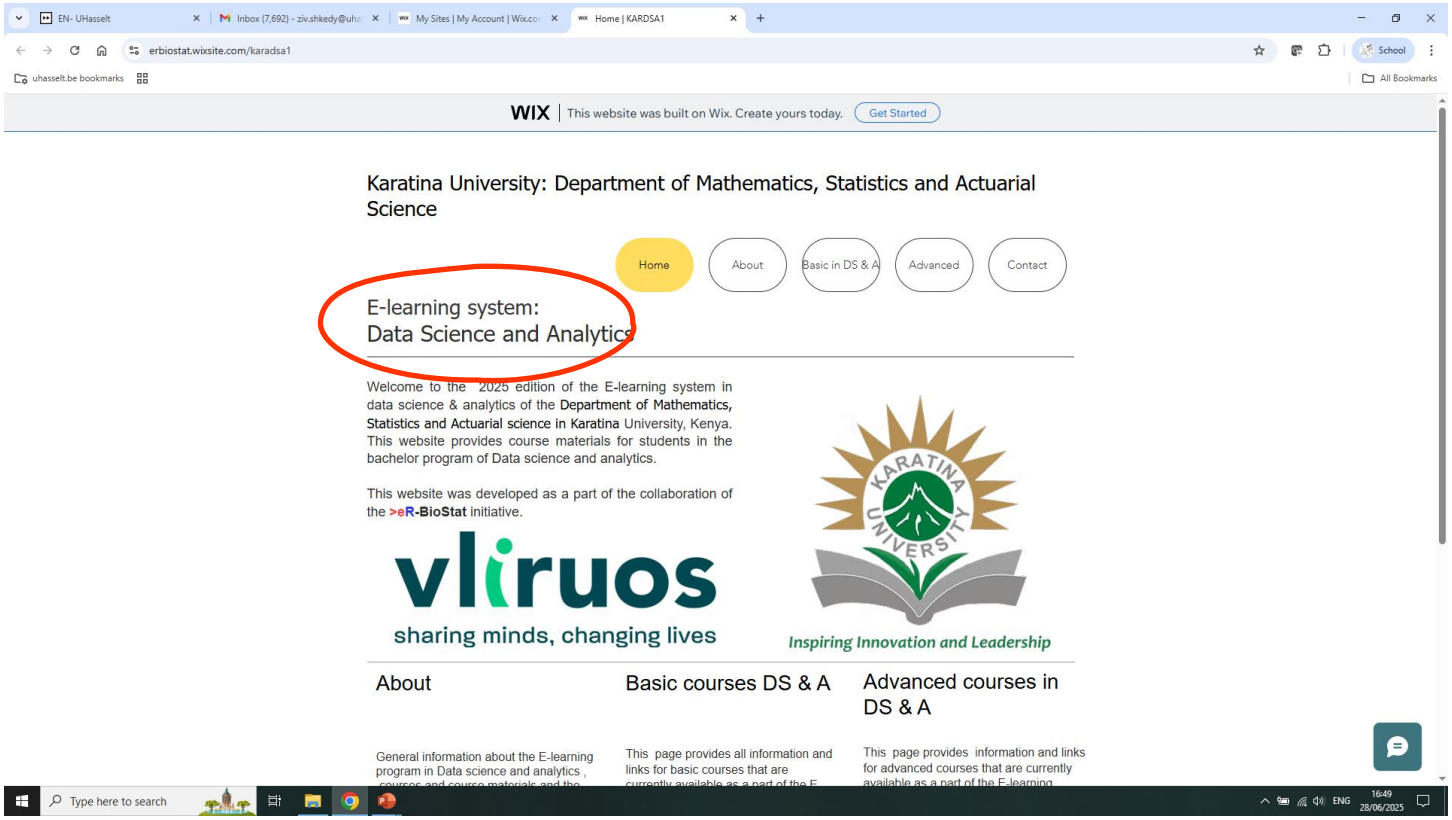
https://erbiostat.wixsite.com/erbiostat



# We R online: the local websites

- Local website: Karatina University (Kenya) :

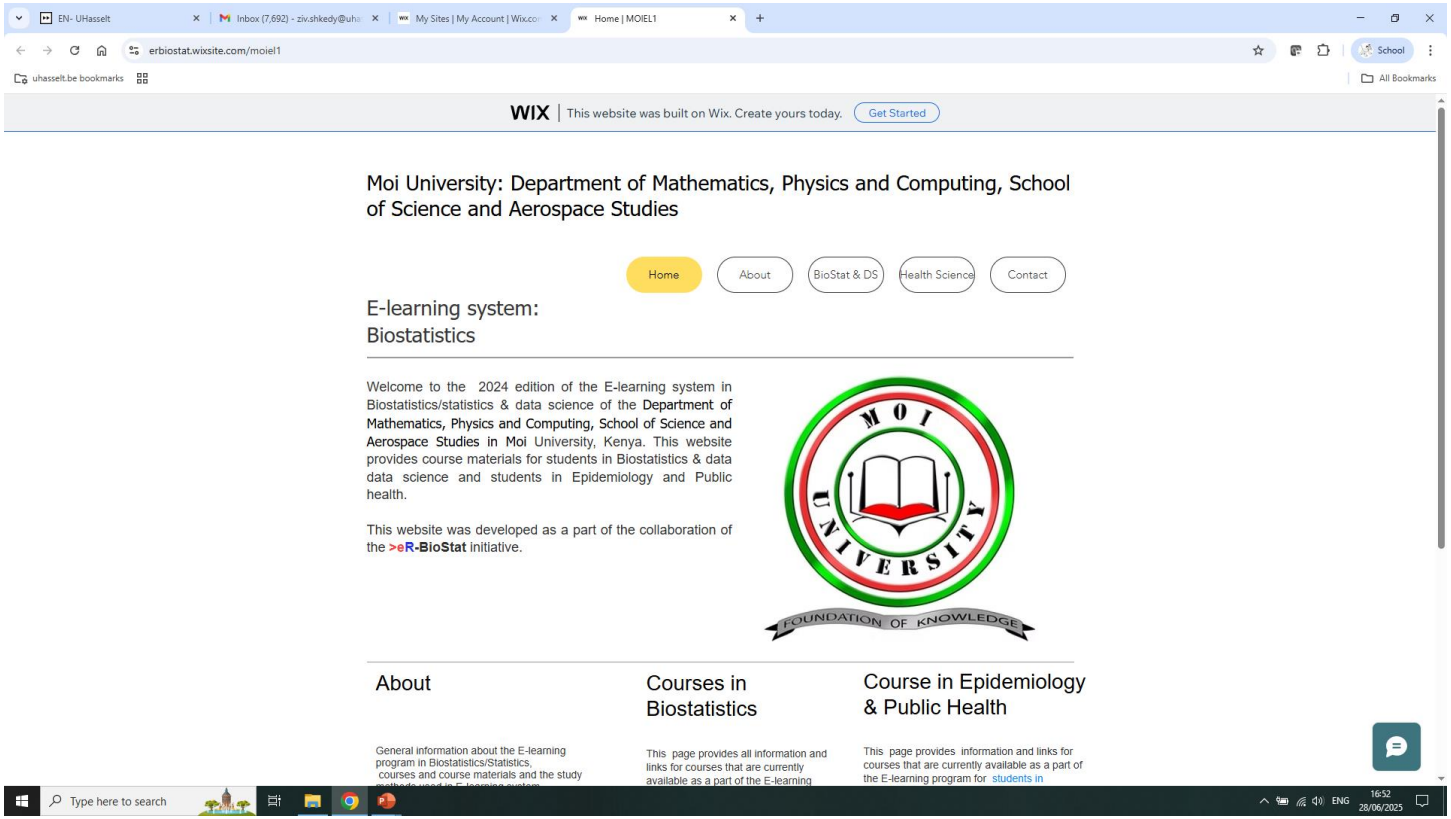
  https://erbiostat.wixsite.com/karadsa1



# We R online: the local websites

- Local website: Moi University (Kenya) :

  https://erbiostat.wixsite.com/moiel1

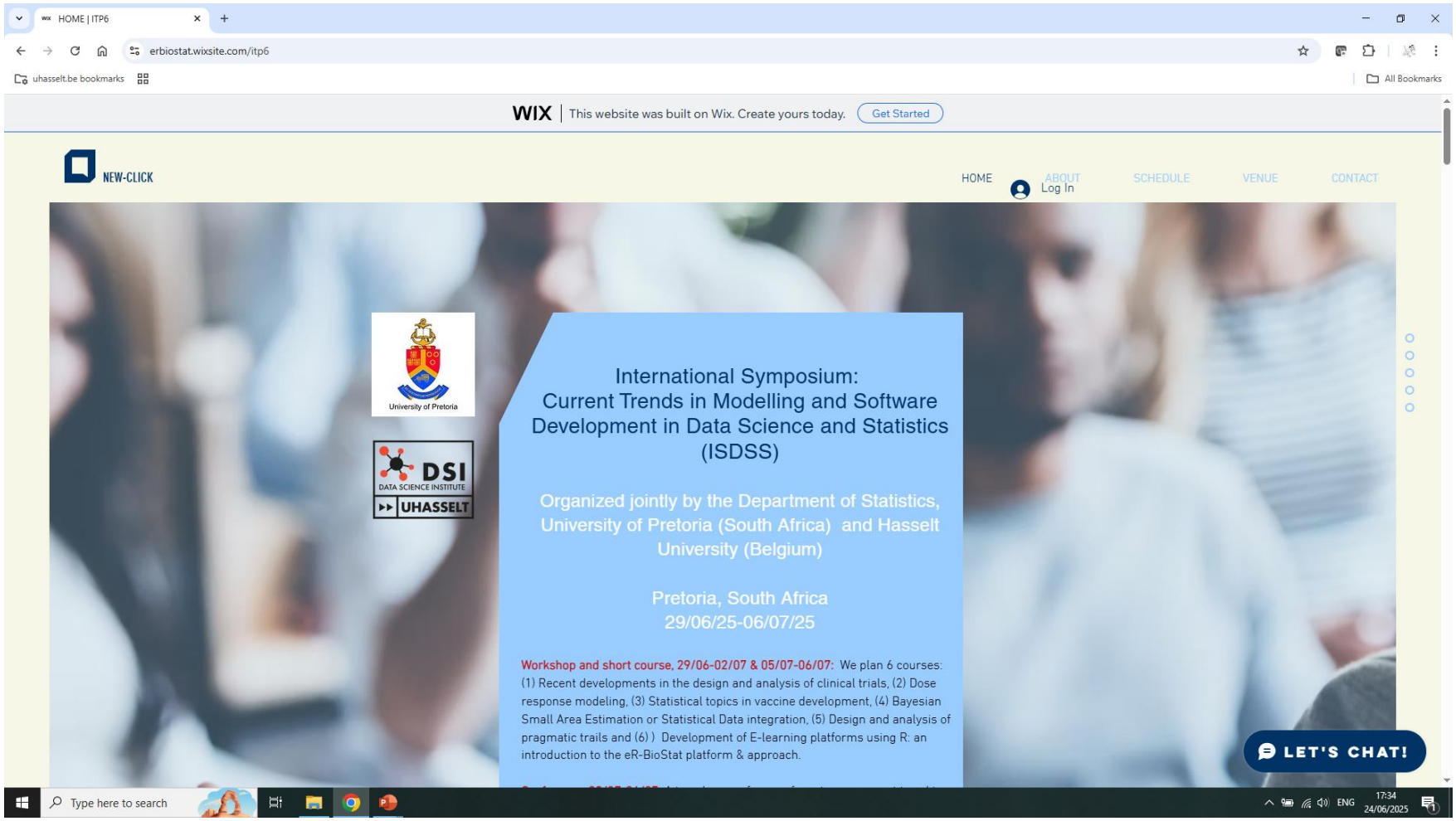


ITP 6: ISDSS 2025

Workshop's website

**https://erbiostat.wixsite.com/itp6**

# ISDSS2025's website




**https://erbiostat.wixsite.com/itp6**

# Structure of the ISDSS2025 workshop

| Day 1 29/06 | Day 2 30/06 | Day 3 01/07 | Day 4 02/07 | Day 5 03/07 | Day 6 04/07 | Day 7 05/07 |
|---|---|---|---|---|---|---|
| Platform training | Stat & data science training | Stat & data science training | Stat & data science training | conference | conference | Platform training |

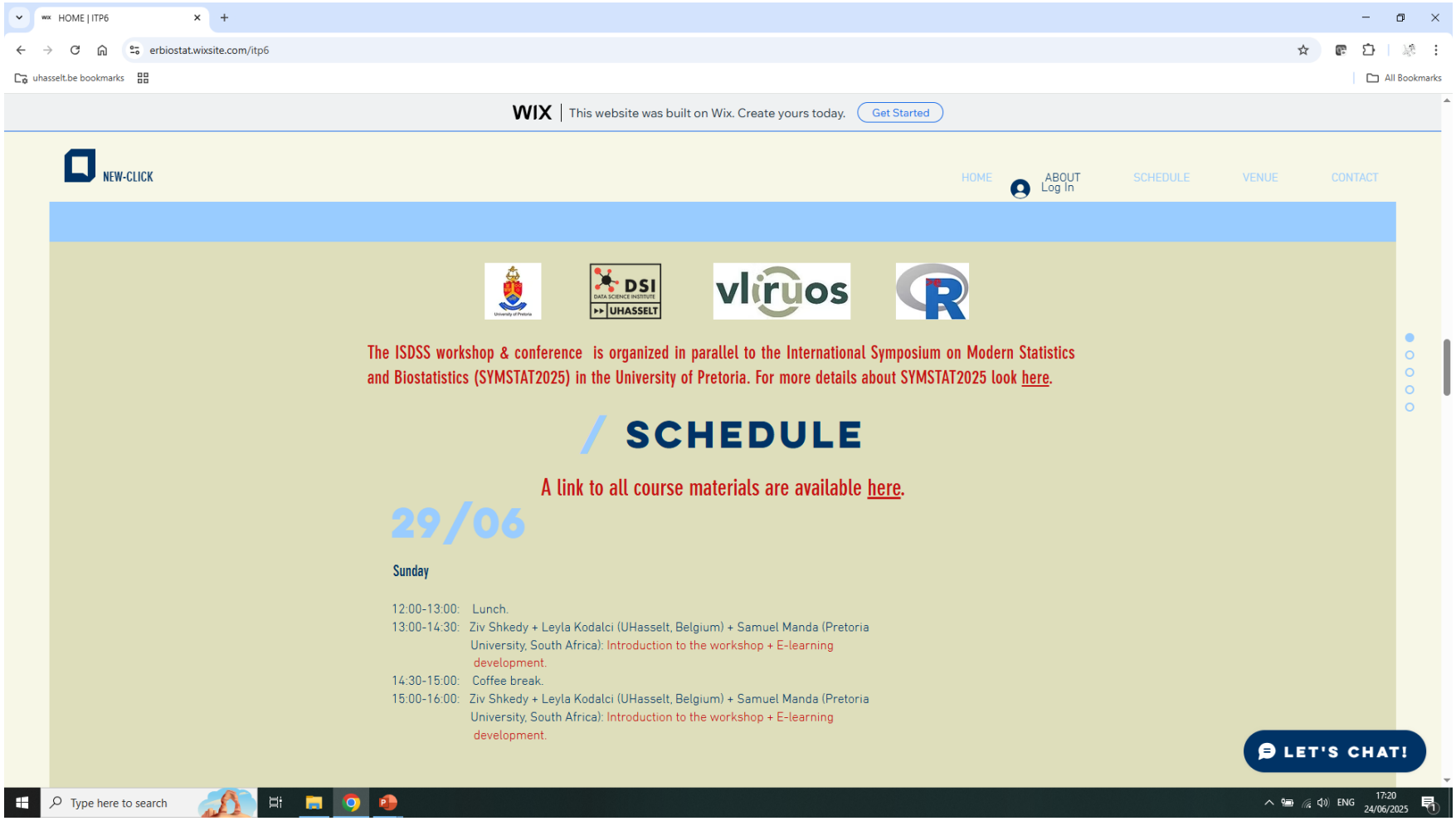
Scientific meeting

Running in parallel to the SYMSTAT2025

+ Online meeting after the workshop

- First 3 days: training.
- Two days conference.
- Platform training.

# The ISDSS2025 structure




**https://erbiostat.wixsite.com/itp6**

# Structure of the ISDSS2025 workshop

| Day 1<br>29/06 | Day 2<br>30/06 | Day 3<br>01/07 | Day 4<br>02/07 | Day 5<br>03/07 | Day 6<br>04/07 | Day 7<br>05/07 |
|---|---|---|---|---|---|---|
| Platform training | Stat & data science training | Stat & data science training | Stat & data science training | conference | conference | Platform training |

+ Online meeting after the workshop

**Javier Cabrera**:

- Recent developments in the design and analysis of clinical trials.

**Adetayo Kasim**:

- Dose response modeling.

# Structure of the ISDSS2025 workshop

| Day 1 29/06 | Day 2 30/06 | Day 3 01/07 | Day 4 02/07 | Day 5 03/07 | Day 6 04/07 | Day 7 05/07 |
|---|---|---|---|---|---|---|
| Platform training | Stat & data science training | Stat & data science training | Stat & data science training | conference | conference | Platform training |

+ Online meeting after the workshop

**Javier Cabrera**:

- Recent developments in the design and analysis of clinical trials.

**Adetayo Kasim**:

- Dose response modeling.

**Dan Lin**:

- Enhancing First-Time-in-Human (FTiH) Trials through Integrated harmaceutical Statistics: the Critical Role of Chemistry, Manufacturing, and Controls (CMC), Non-Clinical, and Translational Phases.

# Structure of the ISDSS2025 workshop

| Day 1<br>29/06 | Day 2<br>30/06 | Day 3<br>01/07 | Day 4<br>02/07 | Day 5<br>03/07 | Day 6<br>04/07 | Day 7<br>05/07 |
|---|---|---|---|---|---|---|
| Platform training | Stat & data science training | Stat & data science training | Stat & data science training | conference | conference | Platform training |

+ Online meeting after the workshop

**Samuel Manda**:

- Bayesian Small Area Estimation or Statistical Data integration.

**Tarylee Reddy**:

- Design and analysis of pragmatic trails.

# Structure of the ISDSS2025 workshop

| Day 1<br>29/06 | Day 2<br>30/06 | Day 3<br>01/07 | Day 4<br>02/07 | Day 5<br>03/07 | Day 6<br>04/07 | Day 7<br>05/07 |
|---|---|---|---|---|---|---|
| Platform training | Stat & data science training | Stat & data science training | Stat & data science training | conference | conference | Platform training |

+ Online meeting after the workshop

**Leyla Kodalci + Ziv Shkedy**:

- Introduction/summary to the workshop.
- Platform training + E-learning development.

# Structure of the ISDSS2025 workshop

| Day 1<br>29/06 | Day 2<br>30/06 | Day 3<br>01/07 | Day 4<br>02/07 | Day 5<br>03/07 | Day 6<br>04/07 | Day 7<br>05/07 |
|---|---|---|---|---|---|---|
| Platform training | Stat & data science training | Stat & data science training | Stat & data science training | conference | conference | Platform training |

+ Online meeting after the workshop

- Conference including joint sessions with SYMSTAT2025.
- 03/07: reception at 17:30.




Where to find the workshop's materials ?

Workshop's website

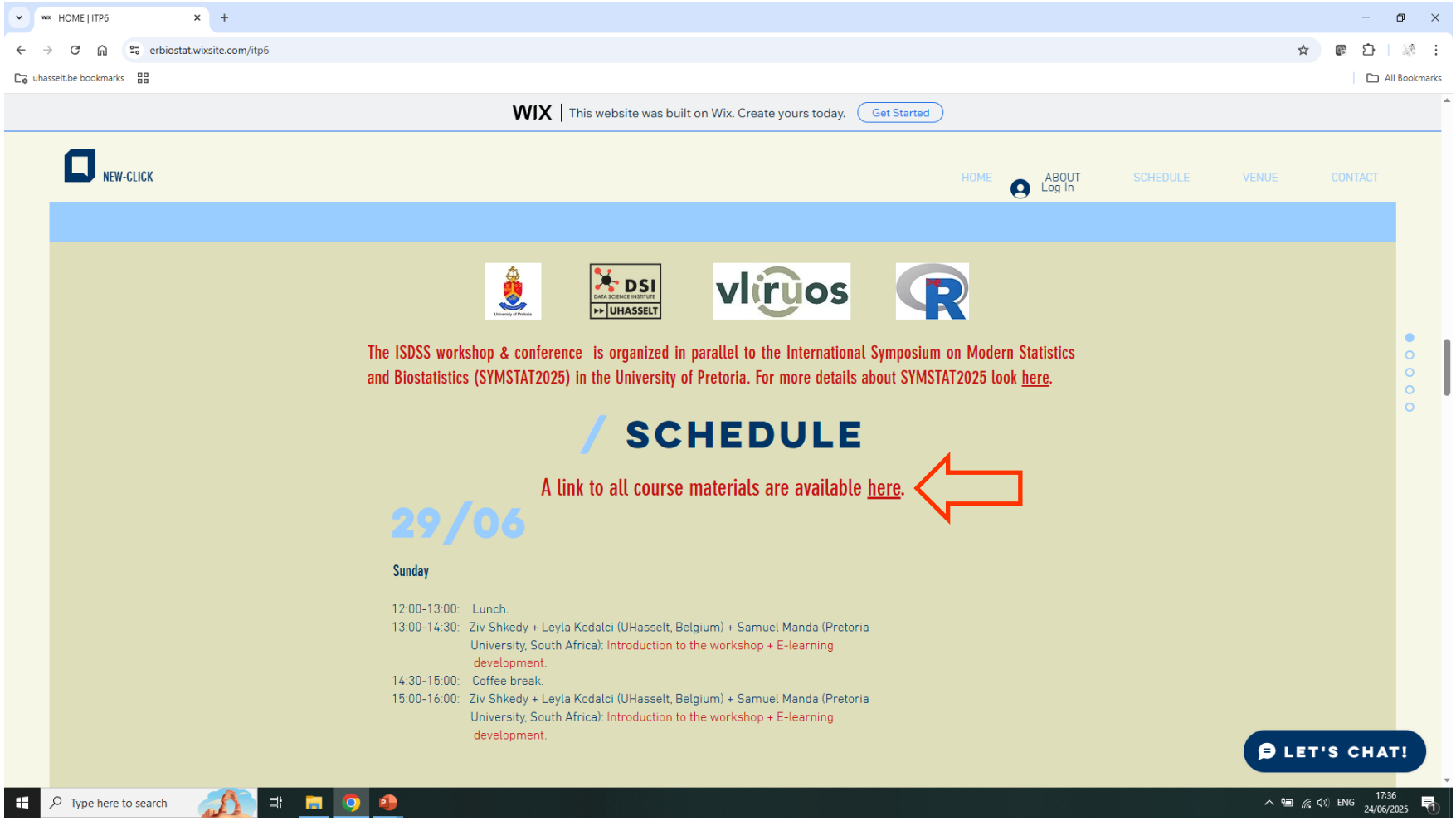
**https://erbiostat.wixsite.com/itp6**

# The ISDSS2025 courses' materials

- We do not print materials.
- All online:
  - Slides.
  - R programs.
  - …

# The ISDSS2025 website

**https://erbiostat.wixsite.com/itp6**



# The eR-BioStat website (online materials)


**https://erbiostat.wixsite.com/itpb0**

# The eR-BioStat website (online materials)


https://erbiostat.wixsite.com/itpb0




What do you need do you need for the workshop ?

Workshop's website

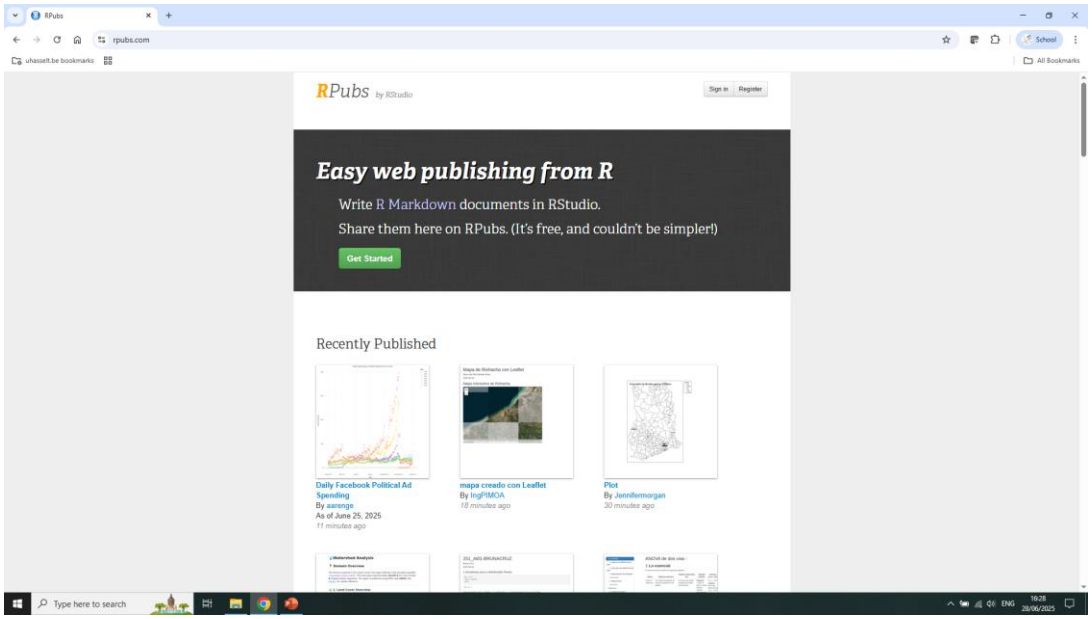
**https://erbiostat.wixsite.com/itp6**

# The ISDSS2025 courses' materials

- Laptop.
- R , R Studio, R markdown.
- Account in RPubs.

# What is our target for ISDSS2025 (for E-learning development)

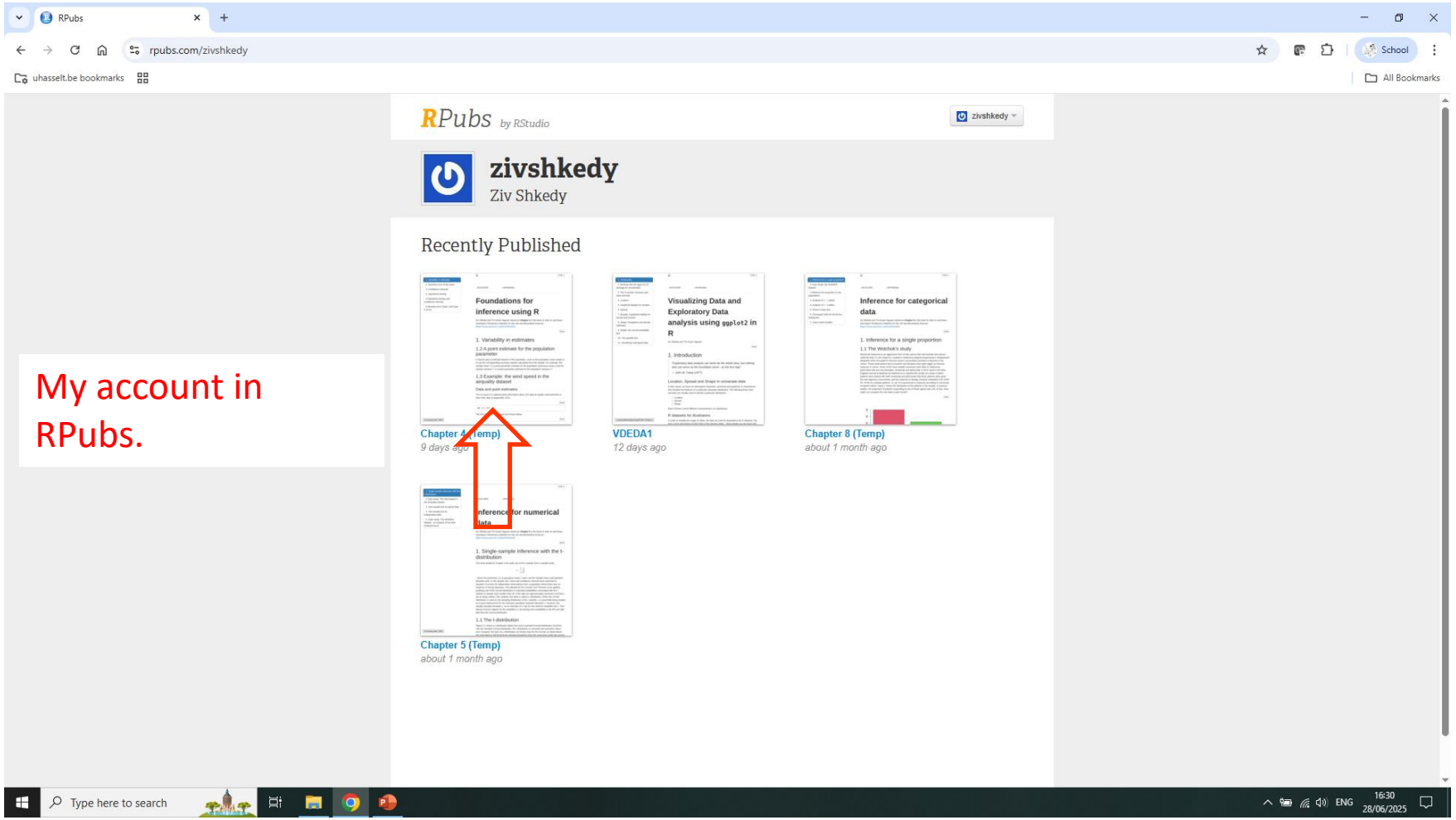
- Producing the output on  the Laptop.
  - Using R , R Studio, R markdown.
- Upload the content online to RPubs.




**https://rpubs.com/**

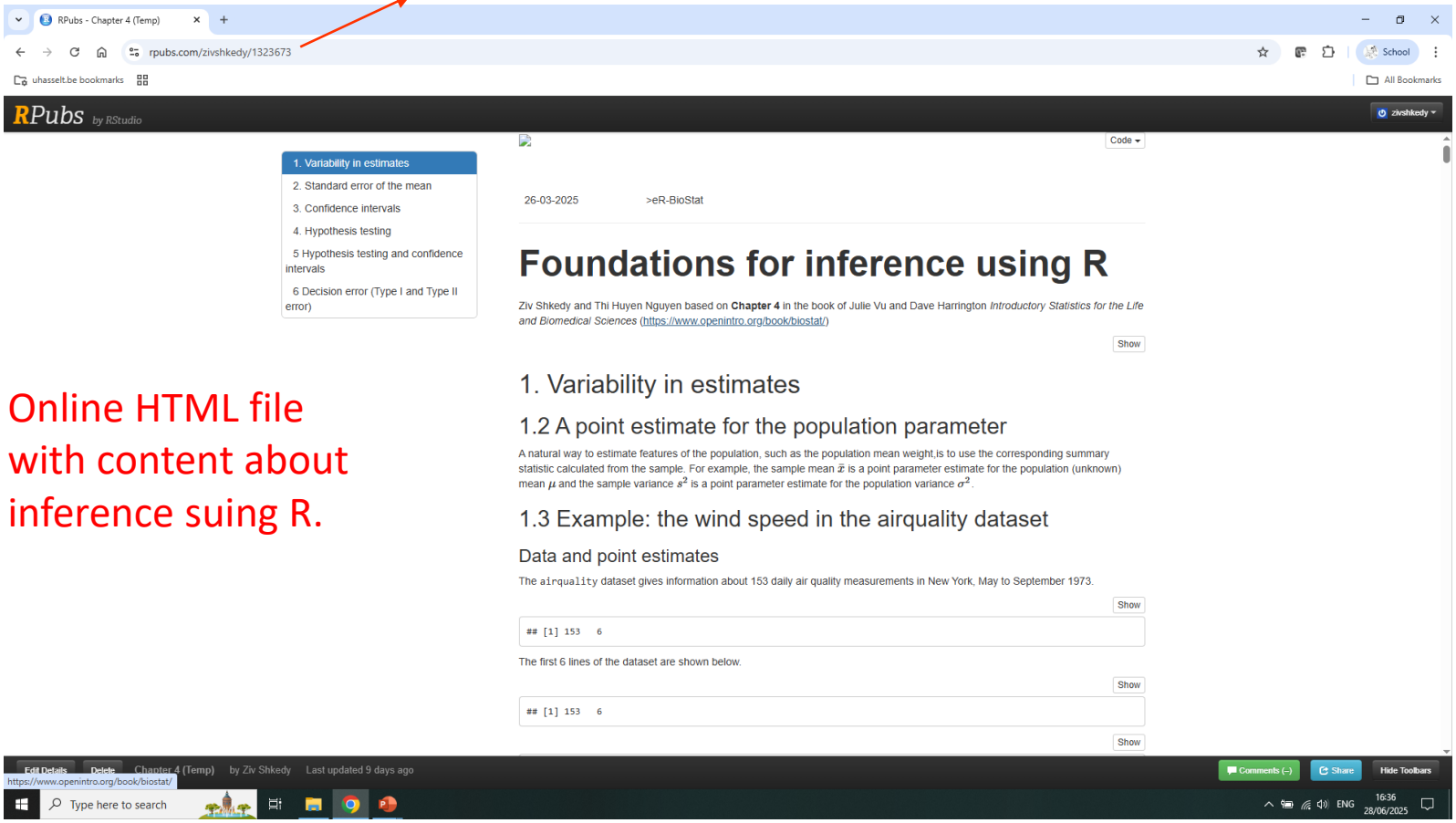
# Creating an online content

My account in RPubs.



# Creating an online content

**https://rpubs.com/zivshkedy/1323673**




Online HTML file with content about inference suing R.

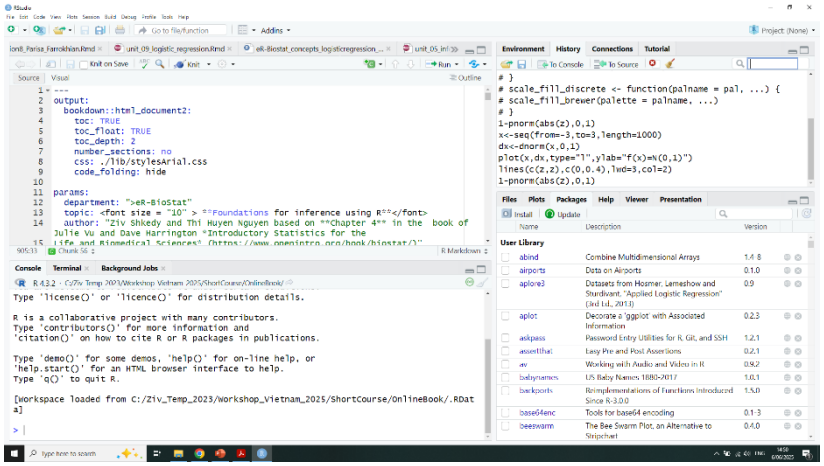
# Creating an online content

| Day 1 29/06 | Day 2 30/06 | Day 3 01/07 | Day 4 02/07 | Day 5 03/07 | Day 6 04/07 | Day 7 05/07 |
|---|---|---|---|---|---|---|
| Platform training | Stat & data science training | Stat & data science training | Stat & data science training | conference | conference | Platform training |

+ Online meeting after the workshop

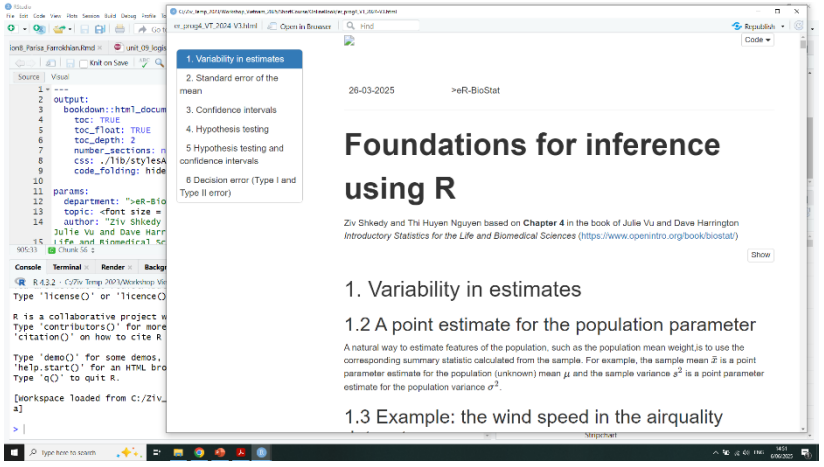
- How to create/produce the HTML file using R Markdown ?
- How to upload online ?
- How to connect to a website ? (next workshop in February 2026).

# From Rmd to HTML (laptop)



- R Markdown program:

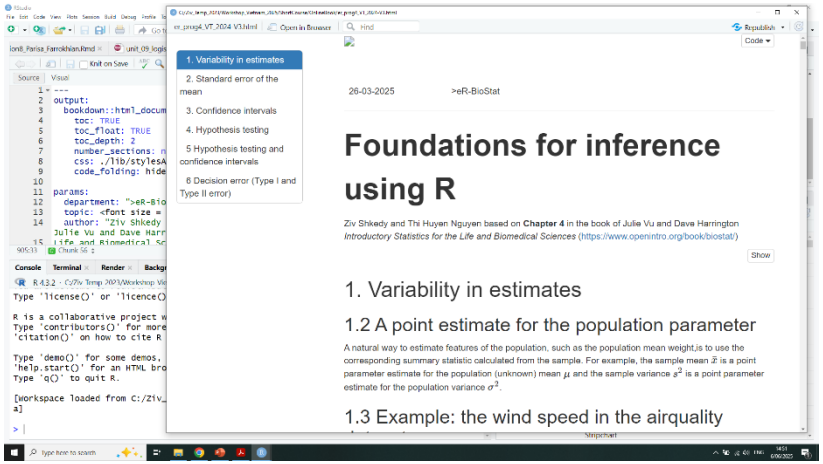
**er_prog4_VT_2024_V1_Rmd**




- R Markdown's output.
- HTML file.

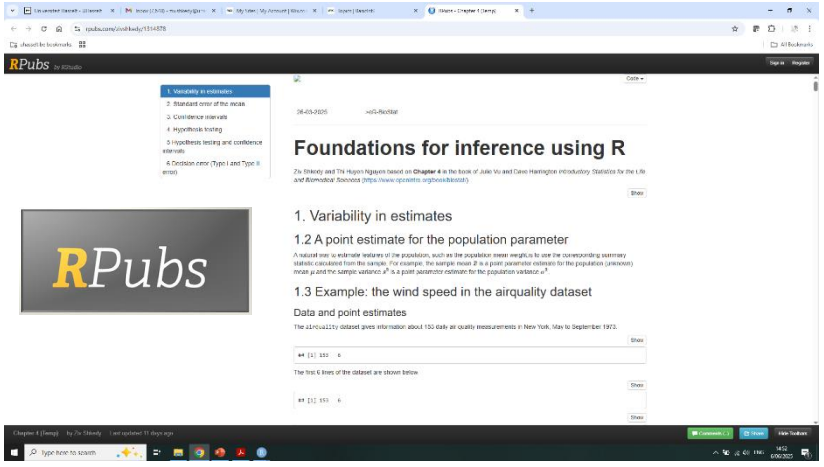
This step: 29/06 & 05/07.

# Offline to Online




- Laptop.

This step: 05/07.




- RPUbs.
- Online (HTML).
  - Everybody can see and use.

**https://rpubs.com/zivshkedy/1323673**

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SHARING MINDS, CHANGING LIVES

# Thank you ve  y much !!

Join our community and look for us online:

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# The ISDSS2025 structure