



# Workshop Orientation

Katherine Muller



# SLC Team

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## NIGERIA

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## Workshop Instructors

## Research Assistants

## UNITED STATES

### \*Lead Moderator

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### Prof. Philip Ernst

Univ. of Alabama, AL

### \*Lead Instructor

### \*Dr. Katherine Muller

North Carolina State Univ.

### Dr. Kate White

# By the end of the workshop, you will:

Gain **confidence** and **tools** for continued self-directed learning.

*Coding*



*Workflow management*



*Collaborative project management*



# By the end of the workshop, you will:

Gain **confidence** and **tools** for continued self-directed learning.

Implement and understand a **Bayesian data analysis workflow** in sustainability science.

*Data*

*Theory*

*Computation*

By the end of the workshop, you will:

Gain **confidence** and **tools** for continued self-directed learning.

*How?*

Implement and understand a **Bayesian data analysis workflow** in sustainability science.

Become part of a **community**.

# Workshop structure

Pre-workshop materials

Asynchronous, self-paced

In-person workshop

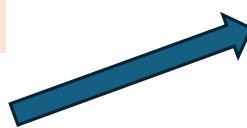
Abuja, Nigeria, January 12-16 2026

# Workshop structure

## Pre-workshop materials

Prepare you for success

- Install and configure software
- Get started with R coding
- Learn some tools to help your data analysis workflow
- Learn important theory fundamentals



## In-person workshop

Complete a Bayesian data analysis project

- Develop research questions for a real dataset
- Design and implement a Bayesian data analysis
- Present your results

Develop **intuitive understanding** to **critically evaluate** quantitative methods.

# **Expectations *before* the workshop**

- 5h/week for two weeks
  - Week 1: Dec. 8-13, 2025
  - Week 2: Dec. 15-20, 2025
- Weekly progress survey
  - How many hours did you spend?
  - What did you do and/or learn?
  - What challenges did you face?
- Pre-workshop video call
  - Jan. 6, 2026
  - Troubleshoot problems
  - Answer questions
- Pre-workshop survey
  - Jan. 9, 2026
  - Feedback on pre-workshop materials
  - Baseline data for evaluating the workshop

# **Expectations *during* the workshop**

- Bring a laptop computer with software installed
- Attend all workshop activities
- Keep data and copyrighted materials to yourself
- Be kind/cooperative/welcoming
- Ask questions/speak up for yourself while being mindful of the group
- *Zero tolerance for abuse/harassment*

# Pre-workshop materials

Interactive Course Map:

<https://lakechadproject.github.io/bayes2026-preworkshop-map/>

Video Lectures (YouTube) 

Instructions, code, exercises, and slides (GitHub)

Recommended resources and publications

# Module 1: Computational Skills

## Objectives:

1. Set up your system with the tools you will need for the workshop *and beyond.*



Videos: **Why and How**

Written instructions

Useful resources

# Module 1: Computational Skills

## Objectives:

1. Set up your system with the tools you will need for the workshop *and beyond.*
2. Get started coding with R.

### **You Can Learn R**

Module developed by Sam Manski

Coding exercises

Recommended resources



Video instructions and demos by Quadri Popoola

Supplemental coding exercises

# Module 2: Theory Fundamentals

## **Objectives:**

Equip you with the theory you need to understand  
and accomplish Bayesian data analysis



7 Video lectures by Prof. Frederi Viens, Quadri Popoola, Prof. Philip Ernst, and Dr. Katherine Muller (~ 10 min each)

Reference code and exercises

Recommended resources

# Module 3: Applications to Sustainability Science

## **Objectives:**

1. Introduce you to active research projects in the Lake Chad Basin



Video lecture by Prof. Adam Ngala

2. Demonstrate how Bayesian stats can be useful in agroecology research.



Video lecture by Dr. Kate White

Recommended articles

# Next

- Questions/comments
- Closing poll

