

HUC SUMMER SCHOOL 2021

# Bringing meaning to statistical practice in climate science using R

18–26 August 2021 | Online and in-person  
at the College of Natural Resources (CNR), Lobesa, Bhutan;  
ICIMOD Offices in Kathmandu, Nepal and Islamabad, Pakistan

## Objective

The Himalayan University Consortium's (HUC) intensive summer school programme aims to provide participants with an overview of key statistical concepts in environmental science, and hands-on experience in the use of statistical methods for weather and climate data analysis using R.

Participants will learn how to apply statistical methods and R to analyze weather and climate data of the Hindu Kush Himalaya (HKH).

The Summer School will be held over seven days, punctuated by a self-study break. The programme is also expected to serve as a springboard for the HUC Thematic Working Group on My Climate Risk, as part of the WCRP's Lighthouse Activity of the same name, in which HUC is a collaborating partner.

## Expected participants

HUC's Summer School caters to undergraduate students of advanced years or MSc/ME/MA students who have completed at least one course in statistics, and who are interested in pursuing studies in climate science. The programme is also open for students and early-career faculty members who wish to sharpen their analytical and critical thinking statistical skills.

This training is open to students from Bhutan, Nepal, and Pakistan. From each country, fifteen participants will be selected on the basis of merit.

The summer school is free of charge for selected participants. Those who are willing to travel and stay at the in-person locations during the programme will be provided with modest logistics support.

Female students and faculty and members from under-represented communities are strongly encouraged to apply.

Interested individuals can apply [here](#).

## Platform and in-person sessions

The programme will adopt a hybrid modality – combining online lectures and in-person sessions at the co-hosting institutions. Ted Shepherd will be delivering virtual lectures. In-person sessions in Bhutan will be conducted by Dechen Lhamo Gyeltshen, supervised by Om Katel, Niraj Poudyal in Nepal, and Lubna Naz in Pakistan.

The in-person component will be organized with COVID-19 precautions in consideration of participants' health and safety. We will implement social distancing norms during the programme and expect that participants will follow all public health guidelines and take personal safety precautions.



## Instructors/Facilitators



### **Theodore Shepherd FRS**

Grantham Professor of Climate Science, Department of Meteorology, University of Reading, UK

Theodore (Ted) Shepherd is a climate scientist who specializes in large-scale atmospheric dynamics, including atmospheric circulation regimes. In recent years, his interest has focused on how to characterize the uncertainty in this aspect of climate change, including extreme events, which led to the development of 'storyline' approaches. Shepherd is engaged in inter-disciplinary collaborations and the challenge of bringing meaning to climate information. He also co-leads the World Climate Research Programme's new Lighthouse Activity 'My Climate Risk'.



### **Dechen Lhamo Gyeltshen**

University of Reading (In charge at the CNR Campus, Bhutan)

Dechen Lhamo Gyeltshen is a third-year student, studying BSc Meteorology and Climate at the University of Reading, UK. She graduated from Yangchenphug Higher Secondary School (Thimphu, Bhutan) in 2017, with a focus on science and math. Following her passion for space weather and extra-terrestrial meteorology, Gyeltshen pursued Meteorology, while also picking up an interest in programming (Python and R) and climate change studies.

She will be a teaching assistant to Ted Shepherd for this summer programme.

### **The Walker Institute**

The Walker Institute at the University of Reading is an interdisciplinary research institute supporting the development of climate resilient societies. The institute involves a network of researchers, policymakers, practitioners, and users who contribute to addressing some of society's fundamental challenges such as migration, food and water security, biodiversity loss, extreme weather, and disasters. The institute also supports the development of climate-resilient societies in some of the poorest areas in the world.

### Om Katel

Dean, Research and Industrial Linkages, College of Natural Resources, Royal University of Bhutan



Om Katel teaches courses on natural resources management, statistics, climate change adaptation and mitigation, integrated watershed management, and other related courses on environmental conservation. He is also a visiting researcher at the Nagoya University, Japan, and a fellow of HUC's Asia Pacific Water Leadership Programme in April 2018, which was funded by South Asia Water Initiative II (The World Bank). Katel has a wide range of research interests and substantial experiences in conservation and management, climate change adaptation, and the dynamics of ecosystems linking climate change and development.

### Niraj Poudyal

Assistant Professor of Econometrics, Program Coordinator (Economics) Kathmandu University School of Arts



Niraj Poudyal teaches econometrics and macroeconomics at the graduate and undergraduate level. His research areas include statistical adequacy of dynamic stochastic general equilibrium, and dynamic models based on multivariate student's t distribution and time series analysis. Poudyal also teaches R with econometrics and data visualization sessions and developed R packages for estimating models. He has extensive experience in running computationally heavy simulations in R for identification tests and risk forecasting in financial markets. He authored the book 'Disability Atlas for Nepal' with GIS mapping techniques within R. Poudyal is a PhD graduate from Virginia Tech, USA with a focus on econometrics.

### Lubna Naz

Assistant Professor at Department of Economics, Institute of Business Administration Karachi, Pakistan



Lubna Naz teaches advanced economic statistics, applied economics, and development economics to undergraduate and graduate students. Naz set up the Interdisciplinary Research and Statistical Analysis Lab (KU-LISA) at the University of Karachi in collaboration with the University of Colorado Boulder, USA, and has conducted workshops on data visualization, research proposal writing, and survey data analysis at KU-LISA. She has published her research on environmental health, energy consumption and greenhouse gas emission, child nutrition, and maternal healthcare in reputable international journals. Naz has a Ph.D. in Economics from Pakistan Institute of Development Economics, Islamabad.

#### In partnership with

The Walker Institute, University of Reading, an HUC Associate Member  
[My Climate Risk](#), a lighthouse activity of World Climate Research Programme (WCRP)

#### Co-hosted by

College of Natural Resources, Royal University of Bhutan  
School of Arts, Kathmandu University  
Institute of Business Administration, University of Karachi



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