

Half day **Online Workshop** on “**Statistical Meta-Analysis**”

19th June 2023

06.30 PM - 09.30 PM **IST**

09.00 AM - 12.00 PM **EST**

03.00 PM - 06.00 PM **CET**

being organized by ICAR-IASRI, New Delhi

Co-Chairs:

Prof Bikas Kumar Sinha and **Prof. Bimal Sinha**

Speakers:

Professor Yehenew Kifle

and

Professor Guido Knapp

Dr. Yehenew Kifle

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University of Maryland Baltimore county, USA

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Dr. Guido Knapp

Department of Statistics

TU Dortmund University, Germany

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Organizer:

Dr. Rajender Parsad

Join Zoom Meeting

<https://us06web.zoom.us/j/89019103995?pwd=M0VGQTl1ZGx3dTYzUXpNK2JNOW5XUT09>

Meeting ID: **890 1910 3995**

Passcode: **728018**

Course Contents

General introduction to statistical meta-analysis:

- What is SMA
- The need for SMA

Basic statistical meta-analysis:

- Fixed effect and random effects model for general effect sizes like standardized mean difference, log odds ratio, or correlation coefficients, inverse variance method, estimators for heterogeneity, generic confidence intervals for effect sizes.
- Application SMA in agricultural experiments: *motivating examples*

Basic statistical meta-analysis in R:

- Short introduction in R, introduction of the R packages meta and metafor

Meta-regression:

- Explaining heterogeneity by covariates levels.

Publication bias:

- Funnel plot for publication bias and Egger's test for publication bias.

Session and time	Topics to be covered	Trainer
Session-I: 6:30 – 7:45 PM IST 9:00 – 10:15 AM EST 3:00 – 4:15 PM CET	<ul style="list-style-type: none"> • General introduction to meta-analysis • Review of basic SMA methods • SMA using R package 	Dr. Yehenew Kifle
<i>30 minute health break (7:45 – 8:15 PM IST)</i>		
Session-II: 8:15 – 9:30 PM IST 10:45 – 12:00 PM EST 4:45 – 6:00 PM CET	<ul style="list-style-type: none"> • Meta-analysis of normal and binary data • Methods for assessing publication bias • Meta-regression 	Dr. Guido Knapp

Workshop/Learning objectives:

At the end of the workshop participants should be able to:

- understand the need for systematic review and meta-analysis
- understand the difference between “fixed effect” and “random effects” meta-analysis model
- conduct meta-analysis for various effect sizes of normal and binary outcomes
- be aware of possible causes of heterogeneity and methods to test for this
- understand how subgroup analyses and meta-regression can be used to explore heterogeneity
- investigate publication bias and/or small study effects
- use of R packages for meta-analysis

Short-biography of Professor Guido Knapp

Prof. Guido Knapp is a faculty member in the Department of Statistics of TU Dortmund University, Germany, since 1992. He got his doctorate in statistics in 1996 as well as his postdoctoral lecture qualification in 2009 from Dortmund University. In 2006, he was visiting assistant professor at the Department of Mathematics and Statistics, University of Maryland, Baltimore County, U.S.A., and from 2012 to 2014, he was visiting associate professor at the Institute of Applied Stochastics and Operations Research, TU Clausthal, Germany.

He has published many papers on various aspects of statistical meta-analysis. His paper on “Models for Combining Results of Different Experiments: Retrospective and Prospective” joint with Joachim Hartung won the annual Saaty prize in 2006. He is also co-author of the book „Statistical Meta-analysis with Applications“ joint with Joachim Hartung and Bimal K. Sinha published by Wiley in 2008. In 2018, he was elected as a member of the Society for Research Methodology.

Short-biography of Professor Yehenew Kifle

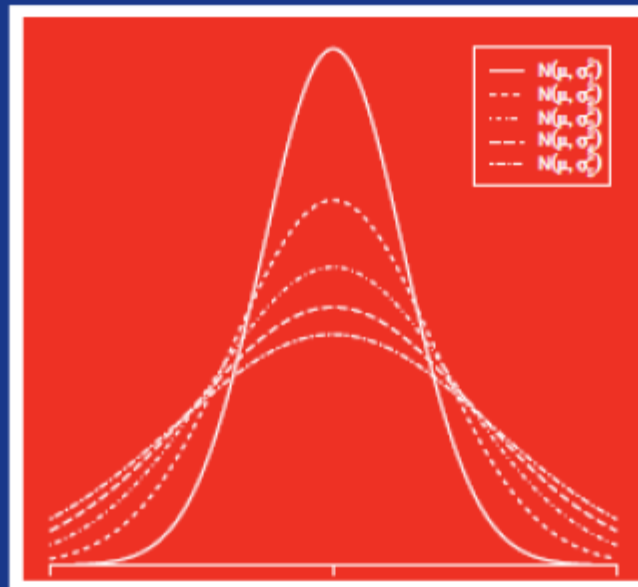
Professor Yehenew Kifle holds Bachelor's and Master's degrees in Applied Statistics from Addis Ababa University in Ethiopia. Following his studies, he joined the Statistics department at Jimma University in Ethiopia as a lecturer. He pursued his Ph.D. in "Statistical Data Analysis" at the University of Gent in Belgium. After completing his doctorate, Dr. Kifle became an Associate Professor of Statistics at the University of Limpopo (UL) in South Africa. During his tenure at UL, he held various positions, including Principal Investigator for several European funded projects. Additionally, he established a Biostatistics research team at UL, which successfully produced numerous Master's and Ph.D. graduates.

In 2018, he took on the role of visiting Professor at the University of Maryland, Baltimore County (UMBC). Since the Fall of 2019, he has been employed at UMBC as a tenure track Assistant Professor of Statistics. Throughout his career, Professor Kifle has made significant contributions to the field, publishing numerous research articles in both theoretical and applied statistics journals. His research primarily revolves around time-to-event modeling, including the modeling of clustered truncated and censored survival data. Currently, he is actively engaged in the study of Statistical Meta-Analysis.

About ICAR-IASRI

The Institute started its journey as a Statistical Section in 1930 “to assist the State Departments of Agriculture and Animal Husbandry in planning and designing their experiments, analysis of experimental data, interpretation of results, and also rendering advice on the formulation of the technical programmes and examining the progress reports of the schemes funded by the Council”, has grown to a premier Institute of relevance in Statistical Sciences (Statistics, Computer Applications and Bioinformatics) and their judicious fusion in agricultural sciences for enriching quality agricultural research and informed policy decision making.

Statistical Meta-Analysis with Applications



Joachim Hartung
Guido Knapp
Bimal K. Sinha

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