

## Workshop Series 2019 - 20

### Spatial Analysis using R and GeoDa

November 13 – 15, 2019 (Wednesday – Friday)

(Last date of registration: October 30, 2019)

Course Director: **Prof. Sanjay Zodpey, Director**

Course Coordinator: **Dr. Ranjana Singh, Associate Professor and Ms. Nilima, Senior Lecturer**



#### Training Venue:

Indian Institute of Public Health- Delhi

Public Health Foundation of India

Plot 47, Sector 44, Institutional area, Near HUDA City Centre metro station, Gurgaon-122002, Haryana, India

#### Key Contact person:

**Ms. Tanuja Bhandari**, Assistant Manager – Program (Trainings)

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#### About the workshop

Spatial analysis includes techniques to study entities using their geographic properties. Spatial epidemiology assists in understanding the pattern and determinants of the condition of concern. Identification of clusters by mapping the spread is important to plan for control strategies and prioritise the allocation of resources to the areas requiring attention. This workshop focuses at the application of spatial statistics in health sciences. Any health sciences researcher with elementary knowledge of statistics can attend this workshop.

By the end of this workshop, the participants will be able to plot and identify the vulnerable locations, analyse and interpret the spatial data for improved decision making.

#### Registration Fee

**Indian National:** 7500 INR per participant

**Foreign National:** 15000 INR per participant

The registration fee includes course kit, lunch and snacks. Please note that the participants will have to bear their own travel, boarding and lodging expenses. However, the organizers will be able to provide a list of hotels or guesthouses nearby the institute upon request.

#### About the faculty

**Dr. Ranjana Singh** is a full-time faculty at the institute with formal training in Statistics, Population studies and Biostatistics. She has around 10 years of experience in the field of health research and applied statistics. Dr Singh is extensively involved in teaching in all in-house and online distance learning academic programs and workshops at the institute. Apart from substantial teaching, she is also engaged in few of the research projects in the field of maternal and child health as a statistician.

**Ms. Nilima** is a faculty at the Institute with the formal training in Statistics and Biostatistics. She has 5 years of experience in data analysis, mapping and public health research. She is involved in teaching Biostatistics to the in-house academic programs, workshops and in short term courses held at the institute. Area of her research interest is Spatial statistics and their application in public health.

The seats are limited therefore, registrations will be confirmed first come first serve basis.

#### Contents

- Getting familiarized to R and GeoDa
  - About R and GeoDa
  - R packages for spatial analysis
- Introduction to spatial data
  - Geographic Information System
  - What is a shapefile?
  - Types of Spatial Data – Point and Areal
- Spatial data
  - Import- Data and shapefile
  - Merge shapefile with the data
- Visualization of spatial data
  - Basic plotting of observations
  - Creating subsets and plot
- Exploring spatial data
  - Detecting overall clustering using Moran's I
  - Detection of local clusters using Local Indicators of Spatial Association (LISA)
  - Introduction to other global and local spatial measures
- Spatial Regression
  - Spatial Lag model
  - Spatial Error mode

#### Who should attend?

This workshop is ideal for public health and medical researchers including medical students, study coordinators, project managers, medical writers, data managers, pharmaceutical scientists, statisticians, and those working in the health sector.

#### How to apply?

Interested participants may email their completed registration form at [trainings@iiphd.org](mailto:trainings@iiphd.org) and submit the fee by E-transfer or by Demand Draft in favor of "Public Health Foundation of India" payable at Delhi and dispatch to the key contact person. **Bank details for E-transfer will be shared upon request. We do not accept cash.**