Scan Distribution Theory and its Applications using SaTScan

About the Course
SaTScan is a free software that analyzes spatial, temporal and space-time data using the spatial, temporal, or space-time scan statistics.

This training course concentrates on applications of the different types of scan statistics using SaTScan™ software. Mainly this part of the course is designed for researchers in many medical and health science, and applied fields, and is written from the point of view of methodology and applications of the scan statistics. Applications of a wide variety of scan statistics to fields ranging from public health, epidemiology, biology, molecular biology, quality control, reliability, and other fields are illustrated. This part of the course also brings together and reviews the statistical and mathematical approaches used to develop exact and approximate results for the scan statistics.

Course Duration
- 6 Days at 8 hours a day

Course Learning Outcomes
After studying this course, you should be able to:
- Understand the SaTScan Software application
- Run SaTScan and analyse data
- Enter basic data into SaTScan
- Understand and analyse Purely Spatial Scan Statistic
- Understand and analyse Space-Time Scan Statistic
- Understand and analyse Space–Time Permutation Scan Statistic
- Interpret SaTScan outputs

Course Outline
1. **Purely Spatial Scan Statistic**
    1.1 Introduction
    1.2 Poisson and Bernoulli Models
    1.3 Likelihood ratio test
    1.4 Properties of the Test Statistic
        1.4.1   Detection versus inference
        1.4.2   Power
    1.5 Computations and Monte Carlo Sampling
    1.6 Limitations of Repeated Purely Spatial Analyses
    1.7 Applications

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Target Participants

The intended audience for this training activity is Statisticians, Biostatisticians and Researchers including Epidemiologist, Biologists, Clinicians, Laboratory and Health professionals with the following prerequisite.

Prerequisites

No prior working knowledge of SaTScan software is required for this course. Understanding of the basic statistical/ bio-statistical concepts, basic computer operational skills and data intuition are required.

Training Approach

This training on Scan Distribution Theory and its Applications is delivered by our seasoned trainers who have vast experience as expert professionals using SaTScan Software. The course

is mainly focused on step-by-step practice for SaTScan Software and taught through a mix of practical activities, theory and group works.

Training manuals and additional reference materials are provided to the participants.

Certification

Upon successful completion of this course, participants will be issued with a certificate.

Tailor-Made Course

We can also do this as a tailor-made course to meet organization-wide needs. A training needs assessment will be done on the training participants to collect data on the existing skills, knowledge gaps, training expectations, and tailor-made needs.