The Introduction to Spatial Epidemiology

Introduction

The aim of the course is to gain an understanding of the value, tools and techniques used in spatial, ecological and environmental epidemiology. The course is designed to provide background information and practical assistance for public health research and practice.

No prior understanding of geography, epidemiology or statistics is required.

Topics covered will include:

Day One (1/2 day): Introduction to Spatial Epidemiology

- Introduction to GIS, spatial analysis and spatial epidemiology
- Spatial epidemiology in practice and the growth of GIS

Day Two: Key Concepts

- Introduction to Geographic concepts
- Interpreting disease maps
- Problems with interpreting ecological data
- Spatial analytical techniques 1: Area based processes
- Spatial analytical techniques 2: Point based processes
- Data Issues: Access to data, ethics and confidentiality

Day Three: Case Studies

- Non-infectious disease spatial epidemiology
- Infectious disease spatial epidemiology
- Public health surveillance
- Outbreak investigation: cluster analysis in practice
- Public health emergency management: Introduction to CIMS (Coordinated Incidence Management System)
- Emerging areas in spatial epidemiology : Zoonotic Diseases

In addition a number of guest speakers will be included.

The course will feature individual and group exercises.

Course Facilitator

Paul White has an MSc. in GIS and a PhD focusing on problems encountered by the routine use of GIS in public health and epidemiology.

Currently Paul works in Public Health Intelligence (PHI), the epidemiology group of the New Zealand Ministry of Health, as the Principle Advisor in spatial epidemiology.

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Prior to coming to New Zealand Paul spent three years as a Research Assistant in the School of Health, University of Derby, and for a following three years as a founding member of the Public Health Geographical Information Sciences Unit in the Department of Public Health at the University of Sheffield. The GIS Unit, the first of its kind, was established to support and promote the use of GeoHealth sciences within the eleven District Health Authorities of the former UK Trent Health Region.

Paul is also the founder and co-director of the *GeoHealth Research Laboratory* (GRL), a collaboration between PHI and the Deaprtment of Geographry, University of Canterbury. Paul's research interests are centred on health geography, with particular reference to spatial issues of health inequalities and rural access and segregation, together with the evangelistic application of GIS and spatial epidemiological methods for practical public health use.

Paul has been teaching GIS and running courses in spatial epidemiology for seven years.