Audience:

The course is designed for researchers, public health professionals, epidemiologists and clinicians familiar with advanced epidemiologic knowledge, algebra, and statistical computing.

Open to all WAHTN partner organisations.

Course Pre-requisites:

A course in introductory epidemiology and biostatistics. Courses in intermediate epidemiology and biostatistics are strongly recommended.

Course Materials:

Rothman KJ, Greenland S, Lash TL.: Modern Epidemiology. 3rd Edition. Lippincott-Raven, Philadelphia, 2008

Registration Costs:

◦ $400 for WAHTN partners
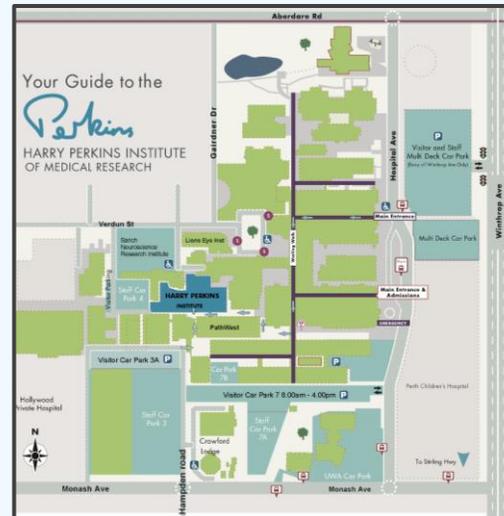◦ $650 for non-partners
* Note course fees are heavily subsidised

REGISTER HERE:
www.trybooking.com/332462

Sponsors:

◦ WA Health Translation Network
◦ UWA School of Population and Global Health

Location:

Harry Perkins Institute of Medical Research
6 Verdun Street, Nedlands, WA 6009
Seminar Room G24

THE UNIVERSITY OF WESTERN AUSTRALIA

WAHTN
Western Australian Health Translation Network

ADVANCED EPIDEMIOLOGY SHORT-COURSE

Presented by

Prof Matthew P. Fox, DSc

Professor of Epidemiology
Boston University, School of Public Health

26th February – 2nd March 2018

5-day workshop
9am – 4pm

The purpose of this intensive short course is to strengthen the methodological skills of the research community.

CONTACT US:
Phone: (08) 6151 0887
Email: info@wahtn.org
Web: www.wahtn.org

Venue:
Harry Perkins Institute of Medical Research
6 Verdun St Nedlands
Seminar Room G24

Professor Matthew Fox

Biography
Professor Matthew Fox, DSc, MPH is Professor of Epidemiology at Boston University, School of Public Health.

His research interests include epidemiologic methodology, in particular bias analyses as well as research in the outcomes of HIV-treatment programs and infectious disease epidemiology (with specific interests in HIV and pneumonia).

Dr Fox's research focusses on ways to improve retention in HIV-care programs in South Africa from the time of testing HIV-positive through long-term treatment. As part of this work, he is involved in the assessment of the impact of changes in South Africa's National Treatment Guidelines for HIV.

Along with Timothy Lash and Aliza K. Fink, Dr Fox is author of the text, Applying Quantitative Bias Analysis to Epidemiologic Data (2009, Springer-Verlag New York). The on-line version of this text is available through the UWA Library.

Dr Fox has been teaching advanced epidemiologic methods units for a decade and currently teaches a third-level epidemiologic methods class, Advanced Epidemiology as well as two other doctoral level epidemiologic methods courses.

Course Description & Learning Objectives

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

- Use the sufficient cause model, counterfactual susceptibility type model, and causal graphs to assist with the design or analysis of an epidemiologic study.

- Calculate adjusted measures of effect and select those that, when collapsible, correspond to the no-confounding condition.

- Use adjusted measures of effect to estimate the direction and magnitude of confounding.

- Distinguish effect measure modification, interdependence, and statistical interaction from one another as separate - but related - concepts of interaction.

- Identify the likely magnitude and direction of bias due to misclassification of exposure, outcomes, confounders and modifiers.

- Weigh the advantages and disadvantages of significance testing and use of p-values.

- Compare the advantages and disadvantages of frequentist and Bayesian approaches to analysis of a single study, to evidence, and to changing your mind.

Course Outline

Monday 26th February

Introduction to Modern Epidemiology:
- › Review of basic epidemiology and intro to advanced epidemiologic concepts.

The Sufficient Cause Model:
- › Introduction to causal models and the benefits of basis of causal thinking.

Tuesday 27th February

The Potential Outcomes Model:
- › Confounded definitions of confounding.

Structural Approaches to Bias:
- › Directed Acyclic Graphs and the potential harms of statistical adjustment.

Wednesday 28th February

Novel Approaches to Dealing with Confounding:
- › Propensity Scores and Marginal Structural Models.

Three Concepts of Interaction:
- › What do we really mean by 'interaction'?

Thursday 1ST March

Beyond "Nondifferential Misclassification Biases Toward The Null":
- › Information bias.

The Abused P-Value:
- › Random Error I: What's in a p-value?

Friday 2nd March

A Show of Confidence:
- › Random Error II: P-values or confidence intervals? An introduction to Bayesian thinking.
- › Ends at 12:00