

I wish to participate in the 3-day course
(please fill in legibly or send an e-mail with the
required information)

Registration Form
4th RUHR- School of Modern Epidemiology

First name

Last name

Title

Institution

Address

Invoice address

Email

Phone

Please enclose proof of your student status.

Cancellation of registration:

Cancellations with full refund are only possible until 6 July 2020. From 18 July to 07 August 2020 we retain 50% of the fee. From 08 August 2020 we will retain the complete fee.

Please fax to: +49-201-723-77-333 or send to

E-mail: zke-summerschool@uk-essen.de




Venue

Novum Select Hotel Handelshof
Am Hauptbahnhof 2
45127 Essen

By public transport

Arriving at Essen central station, leave the
building towards Innenstadt /Kettwiger
Straße (through the main entrance). The
hotel is located opposite the central station
on the right hand side.

Invitation



4th RUHR-School of
Modern Epidemiology
18.08.2020-20.08.2020



Ashley I Naimi

Introduction to Machine Learning
and Causal Inference



UNIVERSITÄT
DUISBURG
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Open-Minded

epi&cr
PhD in Epidemiology and Clinical Research

ZKE

Center of Clinical
Epidemiology

Introduction to Machine Learning and Causal Inference

August 18 – August 20, 2020

Introduction

Ashley I Naimi is an Assistant Professor in the Department of Epidemiology at the Graduate School of Public Health, University of Pittsburgh. His area of expertise lies in reproductive epidemiology, machine learning, and methods for causal inference using observational and experimental data.



His current research is focused on developing methods to quantify compliance adjusted effects in randomized trials, and is currently funded by the NIH to quantify the per protocol effects of low dose aspirin on pregnancy, pregnancy loss, and live birth, and is teaching an advanced epidemiologic methods course for Master's and PhD students at the University of Pittsburgh.

Course Outline

Course Objectives

This course will serve as an introduction to the methods and concepts of modern causal inference. We will also cover why, when, and how to use machine learning methods to estimate causal effects. We will discuss problems with using standard regression methods, challenges in using machine learning algorithms, and demonstrate how g computation, inverse probability weighting, and targeted maximum likelihood estimation can be used to address them.

Main topics and methods

- Introduction to causal inference
- Review of basic regression methods
- G Methods and Double Robust Methods
 - G computation
 - IP-weighting
 - TMLE (Targeted Maximum Likelihood Estimation)
- Introduction to Machine Learning
 - Neural Networks
 - Gradient Boosting
 - Random Forest
 - Support Vector Machines
 - Stacked Generalization (Super Learner)
- Tying it all together

Statistical Experience and Software

We will use the R programming language, as well as the RStudio IDE to illustrate how to implement the methods covered in this course.

Course fees:

Applicants not from Universities:	700 €
Applicants from Universities:	500 €
Students*:	300 €

* first-degree students in bachelor's or master's degree programmes or in a state examination programme

Application deadline:

Registration:	Friday June 19, 2020,	12:00 am
	Tuesday August 18, 2020,	09:00 am

Time Course:

Tuesday	August 18, 2020	10:00 am – 05:15 pm
Wednesday	August 19, 2020	10:00 am – 05:15 pm
Thursday	August 20, 2020	10:00 am – 03:15 pm

Program Director:

Prof. Dr. med. Andreas Stang, MPH,
Head of the Center of Clinical Epidemiology
c/o IMIBE, University Hospital Essen

Administrative staff & contact address:

Mrs. Eva Bock
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Email: zke-summerhschool@uk-essen.de
Information online: <https://www.uk-essen.de/zke/ruhr-school/ruhr-school-2020/>

Course language: English

Hotel:

Novum Select Hotel Handelshof
Am Hauptbahnhof 2
45127 Essen
Email: handelshof@select-hotels.com

Special condition to be booked until 20 July 2020:

(89,- € per room and night, including breakfast, keyword „ZKE_180820“)