Program

Students choose between attending for one week or two weeks. For the first week a student can choose one course from Block 1 and one from Block 2, OR choose the course offered in Block 3. For the second week, students can choose one course from Block 4 and one from Block 5, OR choose the course offered in Block 6. No afternoon sessions will be held on Saturdays. Stata® is the statistical software used in most courses. The Sunday Stata® courses are extra courses, and independent of courses from other blocks.

May 31			
Stata® Courses 1 (9:00-17:00)			
Basics of Stata®	Meta-analysis with Stata®	Analysis of Prospective Studies using Stata®	
June 1 - 6			
Block 1 (8:30-10:30, 14:00-15:30)			
Principles of Biostatistics	Linear Regression for Medical Research	Causal Inference in Epidemiology	
Block 2 (11:00-13:00, 16:00-17:30)			
Principles of Epidemiology	Logistic Regression for Medical Research	Mediation Analysis	
Block 3 (8:30-17:30)			
Statistical Methods for Population Based Cancer Survival Analysis			
June 7			
Stata® Courses 2 (9:00-17:00)			
Basics of Stata®	Data Visualization with Stata®	Epi tables using Stata®	Multiple Imputation with Stata®
June 8 – 13			
Block 4 (8:30-10:30, 14:00-15:30)			
Research Methods in Health: Biostatistics	Longitudinal Data Analysis	An Introduction to Sample Surveys for Health	
Block 5 (11:00-13:00, 16:00-17:30)			
Research Methods in Health: Epidemiology	Survival Analysis	Joint Modelling of Longitudinal and Survival Data	
Block 6 (8:30-17:30)			
Public Health Emergency Preparedness and Response			

Registration Fee

The registration fee covers only the course tuition. The final deadline for registration is 24th of May 2020. Fees depend on: the number of course weeks; the timing of enrolment; and, whether the applicant is currently a student at an accredited university, or not.

	Registration before 8th of March 2020		Registration after 8th of March 2020	
	Student	General	Student	General
1 week	1250 €	1450 €	1450 €	1650 €
2 weeks	2300 €	2700 €	2600 €	3000 €

Standard fee for Stata® courses is 400 €, except Summer School students pay a fee of 250 € per course.

Scholarships

A limited number of scholarships are available for accredited university students. Students from EU or North America are not eligible for scholarships. Deadline for application is 8th of March 2020. Scholarships cover at most half of the tuition cost, and no other expenses. Please see the application form for more information.

Accommodations

Standard lodging expenses in a double room are 115-130€ per person (course participant only), per day, including all meals. More information can be found in the course application form and in the hotel accommodation form in the application section of the website.

Summer School Administration

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Summer School on Modern Methods in Biostatistics and Epidemiology

31 May -13 June 2020

CISON DI VALMARINO-TREVISO, ITALY
CASTELLO BRANDOLINI COLOMBAN

The School is held in the Brandolini Colomban Castle located in Cison di Valmarino, in the Northeast of Italy.

The School offers introductory and advanced courses in biostatistics and epidemiology, and their application to clinical and etiology research and public health.

The castle is a conference center with meeting, sporting, recreational and well-being facilities and yet, conducive to study. For more information, visit its homepage www.castelbrando.it

In collaboration with SISMEC and IBS

www.biostatepi.org

Goals and Rationale

The School offers introductory and advanced courses in medical statistics and epidemiology, and their application to clinical and etiology research and public health.

Modern medical research is becoming increasingly formalized. Today researchers, physicians and health professionals are encouraged to use scientific data, including controlled experiments and well-structured observational data as the source for decision making. Evidence based medicine is entering into many subspecialties, including public health science.

This School provides participants insight into available analytical tools for planning research, handling data and interpreting results. Better understanding of scientific medical papers is also a goal and it requires not only knowledge of the topic being investigated but also an understanding of the research methods being used.

Week-long, Full-day Courses

Public Health Emergency Preparedness and Response - E. Savoia
This course provides an introduction to emergency preparedness and response to health threats including natural disasters, infectious diseases, acts of terrorism, biological, chemical, nuclear, and radiological events.

Statistical Methods for Population Based Cancer Survival Analysis - P. Dickman and P. Lambert
The course covers central concepts, such as how to estimate and model relative survival, cure models, flexible parametric models, loss in expectation of life, and estimation in the presence of competing risks.

Week-long, half-day Courses

An Introduction to Sample Surveys for Health – M. Pagano
Information obtained from surveys provide the basis for measuring, monitoring and advancing the public health. It is thus critical that we utilize high quality surveys. Over the past decade, the use of online surveys and mobile data collection has skyrocketed. We can now conduct research for a fraction of the cost and time it used to take, but the principles of a good survey remain the same. We will spend the week on learning about what makes a good survey and how to analyze the results properly.

Causal Inference in Epidemiology – S. Vansteelandt
Standard statistical methods assess the effect of an exposure on an outcome. The issue of whether the exposure causes the outcome is commonly not addressed, or if improperly addressed, may promote misleading conclusions. This course covers modern causal inference theory that properly infers causal effects from data by introducing popular tools such as causal diagrams, standardisation, propensity scores, instrumental variables, and methods to adjust for time-varying confounding.

Joint Modelling of Longitudinal and Survival Data – M. Crowther
This week-long course will provide an introduction to the joint modelling of longitudinal and survival data through real applications to clinical trial data and electronic health records, describing the methodological framework, underlying assumptions, estimation, model building and predictions.

Linear Regression for Medical Research - R. Bellocco
This introductory course teaches students how to apply and use linear regression models with continuous and categorical predictors. Topic: Interpretation of the estimates, diagnostic and goodness of fit, confounding and interaction, modeling strategies.

Logistic Regression for Medical Research – D. Wypij
This course introduces to the practice and application of logistic regression modeling. Topics: assessment of confounding and effect modification, use of indicator variables, models building methods, goodness-of-fit assessment.

Longitudinal Data Analysis - G. Fitzmaurice
This course focuses on methods for analyzing longitudinal and repeated measures data. This type of study design encompasses epidemiological follow-up studies as well as clinical trials.

Mediation Analysis - A. Bellavia
Mediation analysis evaluates the social and biological pathways by which causal effects operate. This course will introduce traditional and new methods for mediation analysis, with particular emphasis on its implementation and applications in epidemiology and the social sciences.

Principles of Epidemiology - E. Mostofsky
This course provides an introduction to the skills needed by public health professionals and clinicians to critically interpret the epidemiological literature.

Principles of Biostatistics – M. Pagano
Introduces the fundamental principles of statistics applied to biomedicine. The course covers the three tenets of biostatistics: how to handle variability, including descriptive statistics; an introduction to inference (population statements based on a sample from that population); and the use of probability to quantify uncertainty, including diagnostic tests.

Research Methods in Health: Biostatistics - M. Bonetti
Students are introduced to more advanced methods for the comparison of outcome among groups, correlation and linear regression, contingency tables, and study design.

Research Methods in Health: Epidemiology - M. Mittleman
Principles of epidemiology introduced in week 1 will be explored in greater depth. Topics will mainly focus on chronic disease epidemiology, with special emphasis on causal inference and practical study design.

Survival Analysis - N. Orsini
The course introduces the concepts and methods for the analysis of survival data. Survival probabilities, rates, and percentiles will be estimated using non-parametric (Kaplan-Meier), parametric (Poisson), and semi-parametric models (Cox).

Stata® One-day Courses

Analysis of Prospective Studies with Stata®, - F.Ghilotti
This course introduces students to the analysis of cohort studies, managing person times, estimating counts and incidence rate ratios and fitting count regression models.

Basics of Stata® - B. Pongiglione (May 31st), **F. Gallo** (June 7th)
This course is designed to introduce students to the basics of Stata®. It will focus on the minimum set of commands everyone should know to organize their own work. Specific topics include data-management, data-reporting, graphics and basic use of do-files. By the end of this one-day course, the student should be capable of using Stata independently.

Data Visualization with Stata® - G. Capelli
An introduction to the logic and the strategies for visualizing data in Stata®, including issues in the choice of the graphic for different data and aims, and tips and tricks to prepare data for different graphical schemes. The power and flexibility of multiple "layers" in two-way Stata® panels will be exploited.

Epi Tables using Stata® - A. Discacciati
This course teaches basic commands to estimate proportions and mean of binary and continuous outcomes, and create tables for measures of associations.

Meta-analysis with Stata® - L. Ciccolallo
The aim of this course is to provide an overview of methods to perform meta-analysis. We will cover the following topics: data preparation and imputation, fixed-effect and random-effects models, forest plots, heterogeneity across studies, publications bias, sensitivity analysis, meta-regression models and dose-response meta-analysis.

Multiple Imputation using Stata® - N. Orsini
The course introduces the basics of multiple imputations, in particular imputation by chained equations. Students should have a background in regression methods prior to taking this course.