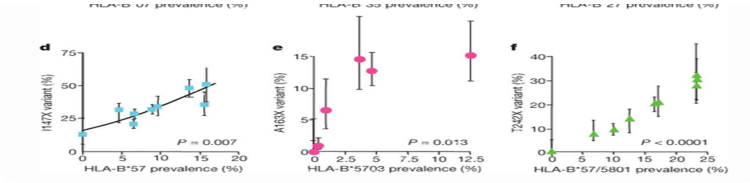
Linear and logistic regression analysis of epidemiologic data

October, 7th - 11th 2019

Scientific Director: Professor Stefania Boccia



Stanley Lemeshow, **Professor of Biostatistics, College of Public Health, The Ohio State University, Columbus, OH, USA**

Rationale and Goals

Medical research increasingly depends on quantitative approaches, while physicians' decision making is becoming strictly based on the evidence of quantified data. The course aims to provide participants with insight into the principles and techniques used to produce and interpret data, by providing an introductory course in statistical modeling. At the end of this course, participants will be able to apply statistical modeling in their practice and research; to verify the reliability of published results; as well as to interpret the results. The course is a useful refresher also for those already trained in epidemiology or public health.

Faculty

Stanley Lemeshow joined The Ohio State University in 1999 as a biostatistics professor in the School of Public Health and the Department of Statistics, director of the biostatistics core of the Comprehensive Cancer Center and director of the University's Center for Biostatistics. He was appointed the Founding Dean of the Ohio State University School of Public Health in 2003 and he served in that capacity for 10 years. Prof. Lemeshow is internationally known for his expertise in biostatistics and epidemiology, with research focused on statistical modeling of medical data, sampling, health disparities and cancer prevention. He has published extensively in the applied and methodological literature and has co-authored three textbooks for John Wiley & Sons Wiley series, a leading publisher for the scientific, technical and medical communities worldwide. His textbooks are: *Applied Logistic Regression* (now in its 3rd Edition), *Applied Survival Analysis* (now in its 2nd edition) and *Sampling of Populations; Methods and Applications* (now in its 4th edition). In 1995, Prof. Lemeshow was elected Fellow of the American Statistical Association and was awarded the Statistics Section Award of the American Public Health Association. In 2003, Prof. Lemeshow was awarded the Wiley Lifetime Award, was elected Fellow of the American Association for the Advancement of Science (AAAS), and was selected Distinguished Graduate Alumnus (Biostatistics) by the University of North Carolina Graduate School Centennial.

Course Content

This intermediate level course aims to provide theoretical and practical training for statistical modeling with particular emphasis on linear, multiple and logistic regression.

	Topics & Assignments
Monday October 7	• Review of Basic Statistical Concepts • Review of Straight Line Regression • Review of Correlation • The ANOVA Table for Straight Line Regression
Tuesday October 8	• Assessing the Appropriateness of the Straight Line Model • Polynomial Regression • Multiple Regression Analysis • The Partial F-test
Wednesday October 9	• Dummy (or indicator) Variables • Statistical Interaction • Comparing Two Straight-line Regressions • The Analysis of Covariance • The Logistic Regression Model
Thursday October 10	• Estimating the Coefficients in the Logistic Model • Interpretation of Coefficients • The Multivariate Case: Statistical Adjustment • Interaction and Confounding • Stratified Analysis via Logistic Regression
Friday October 11	• Summary Measures of Goodness-of-Fit • Area Under the ROC Curve • Numerical Problems • Example: Estimating the Probability of Mortality of ICU Patients

Reference texts: Applied Logistic Regression, 3rd edition by Hosmer, Lemeshow and Sturdivant. Applied Regression Analysis and Other Multivariable Methods, 4th edition by Kleinbaum, Kupper, Nizam and Muller

Course Fee

€850

Tuition fees include course materials, course attendance, and the use of a computer with the software STATA and the use of an internet connection. It does not include board and lodging, travel and other living costs.

Timetable for the Courses

Morning lecture (part 1): 9.00-10.45
Break: 10:45-11:00
Morning Lecture (part 2): 11:00-13:00
Lunch: 13:00-14:00
Exercises: 14:00-16:00

Terms and Condition

Attendance is required. If the number of applications exceeds 15, participants will be accepted on the basis of the date of their application (priority will be given to earlier requests), on the basis of the number of courses to be attended by each participant (priority will be given to individuals following more courses) and to of a review of the applicant's curriculum vitae based on field pertinence and scientific publications.

Application

•Trough the web-site https://roma.unicatt.it/2019-linear-and-logistic-regression-analysis-of-epidemiologic-data

Start of acceptance of admission requests: **1st, January, 2019.** Course registration closes on **2nd, September, 2019**. Admission or non-admission will be communicated by email before **September, 10th, 2019** and registration with payment will be required before **20th, September, 2019**. If the payment is not booked in our account within the mentioned timetable, the reservation for participation in the course cannot be guaranteed.

Venue

Aula B-Istituti Biologici
Faculty of Medicine "A. Gemelli"
Università Cattolica del Sacro Cuore
Largo F. Vito, 1 - 00168 Rome

Accommodation

You can contact and book your room at the University Campus "La Residenza Protetta"
Tel. +39 06 3050901, e-mail: residenza.protetta@policlinicogemelli.it. Less expensive rooms may be available within walking distance or within 5-10 minutes travel on the underground (check on the web Monte Mario - Trionfale quarter).

Further Information

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Organization

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