Brief CV – Professor Luisa Bernardinelli

Prof. Luisa Bernardinelli was born in Casalpusterlengo (Milan, Italy) on 15 February 1955.

Degree, Year and Institution
Degree in Biological Sciences - University of Pavia (1978)

Other degrees
Post-graduate in Medical Statistics, University of Pavia: 50/50 summa cum laude (1983)

Present accademic position
Since 2003 Full Professor of Medical Statistics - Faculty of Medicine and Surgery, University of Pavia
Since 2010 Head of Medical and Genomics Statistics Unit, Dept. of Brain and Behavioral Sciences, University of Pavia
Since 2013 Visiting Professor in Biostatistics, University of Manchester
Since 2012 Coordinator of the 2nd level postgraduate course in Medical Statistics and Genomics, Genomic Data Science
Since 2013 Head of the Unit of Medical and Genomic Statistics
Since 2021 Coordinator of the Biostatistics, Neurophisiology and Psychiatric section of the Dipartment of Brain and Behavioral Sciences, University of Pavia.

Previous accademic positions
1983-1987: Adjunct Professor of Medical Statistics at the Specialization School in Sanitary Statistics- University of Pavia.
1988-1993: Associated Professor of Medical Statistics, Faculty of Medicine and Surgery-University of Sassari.
1993-2000: Associated Professor of Medical Statistics, Faculty of Medicine and Surgery-University of Pavia.
2001-2003: Adjunct Professor of Medical Statistics, Faculty of Medicine and Surgery-University of Pavia
2001-2007: visiting professor at the MRC Biostatistics Unit, Cambridge, UK
2007-2017: visiting professor at the Statistical Laboratory of the Centre of Mathematical Sciences, University of Cambridge, UK
2010-2014 Member of Scuola di Alta Formazione Dottorale, University of Pavia

Past and Present Collaborations with international consortium

1. MolPAGE, Molecular Phenotyping to Accelerate Genomic Epidemiology
2. IMSGC, International Multiple Sclerosis Genetic Consortium
3. TAG, Tobacco and Genetics Consortium
4. MIGC, Myocardial Infarction Genetics Consortium
5. MIMOmics, Methods for Integrated analysis of Multiple Omics datasets

Past and Present International Research Collaborations

1. Department of Statistics, University of Oxford, Oxford, UK
2. Department of Clinical Neurosciences, University of Cambridge
3. School of Biological Science, University of East Anglia
4. Carver College of Medicine, University of Iowa, USA
5. Ghent University, Department of Applied Mathematics and Computer Science, Belgium
6. LUMC, Leiden, NL
7. KTH Royal Institute of Technology Stoccolma, SE
8. Human Genetics, The Wellcome Trust SANGER Institute, Hinxton, UK
9. European Bioinformatics Institute, The Wellcome Trust SANGER Institute, Hinxton KBioscience, UK
10. University of Miami, Hussman Institute for Human Genomics, US
11. Institute of Population Health, Center of Biostatistics, University of Manchester
12. King's College London
13. Center of Biostatistics, University of Manchester, UK

14. Ann Romney Center for Neurologic Diseases, Brigham and Women's Hospital, Harvard
15. Medical School , USA

National Research Collaborations

1. ASL Nuoro, Centro di Tipizzazione Tissutale
2. ASL Nuoro, Divisione di Neurologia
3. Università degli Studi di Milano
4. Dipartimento di Discipline Odontostomatologiche, Università di Pavia
5. Neuromed, Istituto Neurologico Mediterraneo
6. Istituto Auxologico Italiano

Organization of Post-graduate courses

1. International Master in Genetic Epidemiology of the European School in Molecular Medicine and Genetic Epidemiology of the Istituto Universitario Superiore of Pavia, 1998-2003.
2. Specialization School in Medical Statistics – Course in Genetic Epidemiology, 2003-2010
3. Design & Analysis of Genetic-based Association Studies, June 23-27, 2008
4. MolPAGE Training Program:
    1) Statistical Genetics with Mendel, July 4-8, 2005
    2) Statistical Analysis of Genetic and Gene Expression, March 20-24, 2006
    3) Statistical Analysis of Metabonomic and Proteomic, March 26-30, 2007
    4) Causal Inference, May 19-21, 2008
    5) Causal Inference: State-of-the-Art, March 16-18, 2009
5. 2nd level Master in Molecular and Genetic Epidemiology, 2011, 2012.
6. 2nd level Master in Statistics in Medicine and in Genomics, 2013-2015
7. 2nd level Master in Statistics in Medicine and in Genomics, 2014-2016
8. Workshop Scienza e Meditazione, Pavia, 9-10 Ottobre 2015
9. 2nd level Master in Statistics in Medicine and in Genomics, 2015-2017
10. 2nd level Master in Genomic Data Science, 2018-
11. Intensive School for Advanced Graduate Studies: Machine Learning and its applications to Genomics, Chemistry and Neuroscience, 2020
12. Intensive School for Advanced Graduate Studies: Machine Learning and its applications to Cancer Genomics, 2021

Research

STATISTICAL METHODOLOGY. Bayesian analysis of the geographical variation of the disease risk in space and time; Monte Carlo methods; graphical models; Bayesian estimates and their use in descriptive epidemiology; measurement errors in the covariates in ecological studies; development and application of statistical methods in genetic epidemiology: analysis of the association in presence of measurement error, incomplete data both in familiar studies and in case-control studies. Analysis of microarray, methylation and proteomic data. Analysis of pedigree data. Causal inference, joint analysis of genetic and gene expression data to identify genes causally related to Multiple Sclerosis. Analysis of next generation sequencing data. Identification of biomarkers in plasma of Multiple Sclerosis patients.

EPIDEMIOLOGICAL INVESTIGATION. Cancer epidemiology in Sardinia; epidemiology of mellitus insulin-dependent diabetes in Sardinia; epidemiology of multiple sclerosis in Sardinia; epidemiology of enuresis in schoolchildren. Geographical distribution of HLA using records of bone marrow donors in Lombardy; evaluation of social and welfare needs in patients suffering from multiple sclerosis. Association studies between candidate polymorphisms, type 2 diabetes and early myocardial infarction. Cancer genetics. Genetic epidemiology of Inflammatory Bowel Disease. The causal direct effect of FTO on susceptibility to myocardial infarction. Identification of susceptibility genes of multiple sclerosis in the Nuoro province. Investigation of the biological function of ACCN1 and multiple sclerosis. Identification of causal biomarkers in multiple sclerosis via a Mendelian Randomization approach. The experience and interest in causal inference emerges from

the organization of Workshops and Courses on causal inference to being one of the editor of the book CAUSALITY: STATISTICAL PERSPECTIVES AND APPLICATIONS. Wiley, 2011. Her scientific interest to mindfulness-based meditation approach has led to the organization of the workshop Scienza e meditazione held in Pavia, 9-10 October 2016. The workshop illustrated the evidence, the scientific methods and the different interpretations of meditation, plus practical sessions conducted by an expert meditator. She also organized for PhD students the intensive course (theory and practice) in Neuroscience of Meditation. She has been coordinated for the last 4 yaers of a project aimed at evaluating the causal effect of meditation on mental and physical well-being. The project is ongoing and present on the crowdfunding platform UNIVERSITIAMO of the University of Pavia.

She is currently collaborating in projects aimed at evaluating the effect of nutraceutic product in obesity.

She is currently working on COVID-19 for investigating the beneficial role of renin-aldosterone system inhibitor antihypertensives in Covid-19 patients (with impactful implications on therapeutic practice. Equally important results have been obtained (in collaboration with Andy Vail of the Manchester University) from UK and Italian Covid-19 data.

Scopus Author ID: **6603954711** - ORCID ID: 0000-0002-7551-6664