
BIOSTATISTICS, BIOSTATISTICIANS, AND THEIR ENVIRONMENT

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Abstract

A general overview is given of biostatistics applications and the broad methodological categories associated with it. The various paradigms and their contrasts (estimation versus hypothesis testing; experimental versus observational; representative versus comparative ;...) are reviewed.

Special attention is given to specific areas such as longitudinal data in clinical trials and other biomedical studies and to clustered data from developmental toxicity studies. In particular, contemporary clinical trials and their current-day statistical challenges are discussed.

The focus on this presentation is on general principles, broad methodological categories, rather than detailed. There is little or no focus on mathematical detail. The intended audience is researchers from life sciences fields and beyond.



Geert Molenberghs was born in Antwerp, Belgium, on February 5, 1965. He is Professor of Biostatistics at the Universiteit Hasselt and KU Leuven in Belgium. He received the B.S. degree in mathematics (1988) and a Ph.D. in biostatistics (1993) from the Universiteit Antwerpen. Dr Molenberghs published methodological work on surrogate markers in clinical trials, categorical data, longitudinal data analysis, and on the analysis of non-response in clinical and epidemiological studies. He served as Joint Editor for Applied Statistics, Co-editor for Biometrics, Co-editor for Biostatistics, Series Editor of Wiley Probability & Statistics, and Wiley StatsRef. He acted and acts as Associate Editor for several journals and undertook numerous refereeing tasks (for journals, faculty member promotion, faculty member appointments, etc.). He was President of the International Biometric Society. He was elected Fellow of the American Statistical Association and received the Guy Medal in Bronze from the Royal Statistical Society. He has held visiting positions at the Harvard School of Public Health (Boston, MA). He is founding director of the Center for Statistics at Hasselt University and currently the director of the Interuniversity Institute for Biostatistics and statistical Bioinformatics, I-BioStat, a joint initiative of the Hasselt and Leuven universities. He published, as editor and author of several books on longitudinal data analysis, possibly subject to missingness (with Geert Verbeke) and surrogate endpoints. He has (co-)taught nearly 200 short and longer courses on the topic in universities as well as industry, in Europe, North America, Latin America, and Australia. He received research funding from FWO, IWT, the EU (FP7), U.S. NIH, U.S. NSF, UHasselt, and KU Leuven. He is member of the Belgian Royal Academy of Medicine.

Publications: ±730 publications, of which: ±530 international peer-reviewed: ±75 proceedings; 15 invited discussions; 4 book reviews; 9 book editorships; 8 monographs as author; ±60 chapters; and ±20 local and outreach contributions.

Honors and Awards

2002: Guy Medal in Bronze, Royal Statistical Society (UK);
2003: Elected Fellow, American Statistical Association (US);
2003, 2004, 2006, 2008: Excellence in Continuing Education Award, American Statistical Association (US); 2004: Myrto Lefkopoulou Distinguished Lectureship Award, Harvard University, Boston (US); 2005: Mitchell Lectureship Recipient, University of Glasgow (UK); 2006: Elected Member, International Statistical Institute;
2007: Belgian Francqui Chair, Agricultural Faculty, Gembloux (B);
2009: Belgian Francqui Chair, Faculty of Medicine, Antwerp University (B);
2010: Drug Information Journal's Donald Francke Award for Overall Excellence in Publishing; Award for Outstanding Contribution to the Development of the IBS; Promoter of Princess Lilian Visiting Professorship for Professor A.A. Tsiatis (North Carolina State University, Raleigh, NC, U.S.A. (2010-2011));
2010- American Statistical Association Professional Statistician.

National and International Functions

Editor: Biometric Bulletin (1998-2001); Applied Statistics (2001-2004); Biometrics (2007-2009); Statistics in Medicine (Guest Editor, 2009); Biostatistics (2010-2015); Wiley Series in Probability and Statistics (2003-present), Wiley Statsref (2013-); Biometrics Executive Editor (2018-2020).

International Biometric Society: Member of the Editorial Advisory Committee (1999-2002); Executive Committee Member as: General Secretary (2001-2003), Vice-President (2003 and 2006), President (2004-2005).

American Statistical Association: Chair of the International Representative Nominating Committee (2006); Chairman of American Statistical Association Committee on International Relations in Statistics (2014-present).

Royal Statistical Society (UK): Member of the Research Section Committee (1998-2001); Member of President Nominating Committee (1999-2000); Member of the Editorial Policy Steering Committee (2001-2004); Member of the Program Committee (2001-2004); Member of the International Committee (2001-2004); Secretary (1996-1998) and President (1998-1999) of the Three Country Corner Local Group.

Service on the National Science Foundation-Flanders: Member of the Mathematics Committee (2003-2010); Member of the Committee for International Relations (2003-2010); Member of the Committee Reform Committee (2008-2010).

2003-2007 & 2008-2012: Steering Committee Member of European Science Foundation Research Networking Programme on "Quantitative Methods in the Social Sciences (QMSS)".

Scientific Institute of Public Health: Scientific Board member (2014-).