

Daniele De Martini

daniele.demartini@unige.it



CURRICULUM VITAE

EDUCATION

- Ph.D.: Methodological Clinical Epidemiology, Università di Genova, 1997. (Dissertation: Methods to compute the power and to determine the sample size for nonparametric tests. Advisors: Prof. V. Balestra, Prof. F. Pesarin.)
- Laurea: Mathematics, Università di Genova, 1991. (Thesis: Efron's bootstrap: procedures and asymptotic consistency. Advisor: Prof. G. Pistone.)

ACADEMIC POSITIONS

- Associate Professor of Statistics, Università degli Studi di Genova, 2022-present.
- Associate Professor of Statistics, Università degli Studi di Milano-Bicocca, 2014-2022.
- Assistant Professor of Statistics, Università degli Studi di Milano - Bicocca, 2010-2014.
- Assistant Professor of Statistics, Università del Piemonte Orientale, 1998-2010.
- Lecturer of Statistics, Université de Nice Sophia-Antipolis, I.U.T. - S.T.I.D. (Statistique et Traitement Informatique des Données), 1998-2005.
- Contract Professor of Statistics, Università di Genova, 1997-98.

VISITING

- 2010, July-August: Department of Statistics, Stanford University – Palo Alto (CA).
- 2006, August-September: Dep. of Statistics, Stanford University – Palo Alto (CA).
- 2005, October: Department of Medical Epidemiology and Biostatistics, Karolinska Institutet - Stockholm (Sweden).
- 2005, August-September: Dep. of Statistics, Stanford University – Palo Alto (CA).

MEMBERSHIPS

- Italian Statistical Society - SIS www.sis-statistica.it/
- American Statistical Association -ASA www.amstat.org/
- Society for Clinical Trials - SCT www.sctweb.org/
- Drug Information Association - SCT www.diaglobal.org/

ACADEMIC ACTIVITIES

- Reviewer for the American Mathematical Society - AMS, 2004-2013.
- Reviewer for the following Journals: *The American Statistician* (TAS); *Journal of Statistical Planning and Inference* (JSPI); *Journal of Statistical Computation and Simulation* (JSCS); *Statistica e Applicazioni*; *International Journal of Medical Informatics*; *Therapeutic Innovation & Regulatory Science* (TIRS); *Biometrical Journal*.

GRANTS

- Università del Piemonte Orientale grants for international mobility (2005, 2006).
- Italian Ministry for University and Scientific Research, PRIN07 grant: “Statistical methods for learning in clinical research”, (2007-2009).
- Italian Ministry for University and Scientific Research, PRIN99 grant “Statistical methods for complex and multivariate problems” (1999-2001).

RESEARCH CONTRIBUTIONS

Books

- “Success Probability Estimation with Applications to Clinical Trials”; *John Wiley & Sons, Hoboken - NJ*, 2013.
- “Inferenza Statistica: Un'introduzione per le scienze economiche e aziendali”; *Società Editrice Esculapio*, 2024.

Journal Publications

- “Innovazioni didattiche nell’insegnamento Statistica Inferenziale, presso l’Università di Milano-Bicocca”, with Francesca Gorini. *I Quaderni del GLIA – Genova University Press*; 4 (4) 2025: Dalle politiche alle pratiche. La professionalità docente nell’evoluzione istituzionale e tecnologica.
- “Phase III Failures for a Lack of Efficacy can be, in Significant Part, Recovered (Introducing Success Probability Estimation Quantitatively)”; *Epidemiology Biostatistics and Public Health (EBPH)*; 18 (1), 2023. DOI :10.54103/2282-0930-20638.
- “Improving Reproducibility Probability estimation, preserving RP-testing”; with L. De Capitani; *Statistical Methods and Applications (SMA)*; 30, 49-77, 2021. DOI :10.1007/s10260-020-00513-x.
- “Empowering Phase II Clinical Trials to Reduce Phase III Failures”; *Pharmaceutical Statistics*, vol. 19 (3), 178-186; DOI: 10.1002/pst.1980, 2020.
- “Phase III Failures for a Lack of Efficacy can be, in Significant Part, Recovered”; *Social Science Research Network (SSRN)*, 2019.
- “Phase III sample size based on the ‘power to detect’ is logically wrong and usually unethical”; *Social Science Research Network (SSRN)*, DOI: 10.2139/ssrn.3328810, 2019.
- “Reproducibility Probability Testing Kills P-value”. *Social Science Research Network (SSRN)*, DOI: 10.2139/ssrn.32955232018, 2018.
- “Computing individual and collective ethical utility for optimally planning phase III trials”, with L. De Capitani; *Biometrical Journal*, vol. 60 (6), 1121-1134. DOI: 10.1002/bimj.201800042, 2018.
- “Reproducibility Probability Estimation and RP-Testing for some nonparametric tests”, with L. De Capitani; *Entropy*, Special Issue on *Statistical Significance and the Logic of Hypothesis Testing*, vol. 18 (4), n° 142, doi:10.3390/e18040142, 2016.
- “Profit Evaluations when Adaptation by Design is Applied”; *Therapeutic Innovation and Regulatory Science*, vol. 50 (2), 213-220, 2016.
- “Reproducibility probability estimation and testing for the Wilcoxon rank-sum test”, with L. De Capitani; *Journal of Statistical Computation and Simulation*, Vol. 85 (3), 468-493, 2015.
- “Allocating the Sample Size in Phase II and III Trials to Optimize Success Probability”; *Epidemiology, Biostatistics and Public Health*, Vol.11 (4), 2014.

- “Stability Criteria for the Outcomes of Statistical Tests to Assess Drug Effectiveness with a Single Study”; *Pharmaceutical Statistics*; Vol. 11, 273-279, 2012.
- “Power Estimation for Multiple Co-Primary Endpoints: a comparison among conservative solutions”; with A. Lucadamo, N. Accoto; *Italian Journal of Public Health*; Vol. 9 (4), 2012.
- “Robustness and corrections for sample size adaptation strategies based on effect size estimation”; *Communications in Statistics - Simulation and Computation*; Vol. 40 (9), 1263-1277, 2011.
- “Adapting by calibration the sample size of a phase III trial on the basis of phase II data”; *Pharmaceutical Statistics*; Vol. 10 (2), 89-95, 2011.
- “Conservative sample size estimation in nonparametrics”; *Journal of Biopharmaceutical Statistics*; Vol. 21. (1), 24-41, 2011.
- “On stochastic orderings of the Wilcoxon rank sum test statistic - with applications to reproducibility probability estimation testing”, with L. De Capitani; *Statistics and Probability Letters*; Vol.81, 937-946, 2011.
- “Evaluating the Risk in Sample Size Determination”. *Communications in Statistics - Simulation and Computation*; Vol. 37, n.9, pp. 1776-1784, 2008.
- “Reproducibility probability estimation for testing statistical hypotheses”. *Statistics and Probability Letters*; Vol. 78, n.9, pp.1056-1061, 2008.
- “On multivariate smoothed bootstrap consistency”, with F. Rapallo; *Journal of Statistical Planning and Inference*; Vol.138, n.6, pp.1828-1835, 2008.
- “Correcting Bias in Sample Size Estimation”. *Statistica Applicata*; Vol.19, n.2, 2007.
- “Copula-based models for the power of independence tests”, with E. Vespa; *Communication in Statistics – Theory and Methods*; Vol.34, n.12, pp. 2283-2297, 2005.
- “Pointwise estimate of the power and sample size determination for permutation tests”. *Statistica* (Bologna); LXII, n.4, pp.767-778, 2002.
- “On unbiasedness and power of permutation tests”, with F. Pesarin; *Metron*; Vol.LX, n.1-2, pp.5-22, 2002.
- “Calculating the power of permutation tests: a comparison between nonparametric estimators”, with F. Rapallo; *Journal of Applied Statistical Science*; Vol.11, n.2, pp.111-122, 2002.

- “Smoothed bootstrap consistency through the convergence in Mallows metric of smooth estimates”. *Journal of Nonparametric Statistics*; Vol.12, pp. 819-835, 2000.
- “A theoretical four-compartment model to evaluate separate kidney technetium ^{99m}MAG3 kinetics in humans”, with Curti G., Santaniello B., Taddei G., Fresco G.F.; *Kidney International*; Vol.54; pp. 2029-2036; 1998.
- “Nitric oxide modulates in vivo and in vitro growth hormone release in acromegaly”, with Cuttica C.M., Giusti M., Bocca L., Sessarego P., Valenti S., Spaziante R., Giordano G.; *Neuroendocrinology*; 66: pp. 426-431; 1997.
- “Effects of Sumatriptan on GHRH stimulated GH secretion in acromegaly”, with Giusti M., Cuttica C.M., Sessarego P., Ponzani P., Falivene M.R., Valenti S., Giordano G.; *Recenti Progressi in Medicina*; Vol.88, No.6; 1997.
- “Prolactin decrease and shift to a normal-like isoform profile during treatment with Quinagolide in a patient affected by an invasive prolactinoma”, with Guido R., Valenti S., Foppiani L., Cossu M., Giusti M.; *Journal of Endocrinological Investigation*; 20 (5); pp.289-293; 1997.
- “Looking for Statistical Stability: a New Method of Evaluating Reliability of Statistical Tests”. *Journal of Biological Research – Boll.Soc.It.Biol.Sper.*; Vol.LXXII, pp. 179-186, 1996.
- “Quantitative analyses of plasma opsonizing activity and polymorphonuclear cell response during phagocytosis: standardisation of a chemiluminescent method”, with Farinelli A., Setti M., Puppo V., Scudeletti M., Balestra V., Indiveri F.; *Acta Pathologica, Microbiologica et Immunologica Scandinavica (APMIS)*; 104, pp. 500-508; 1996.

CONFERENCE PROCEEDINGS, SEMINARS AND TALKS

- “Competenze da preservare e potenziare, complementari all’AI: la Didattica del Residuo”, with Francesca Gorini. *Convegno Nazionale sul Faculty Development*; Genova, Italy, Giugno 2025.
- “Concentration Indexes from the Geometric Perspective. *Convegno SIS 2025: Statistics for Innovation*; Genova, Italy, Giugno 2025.
- “Alcune innovazioni didattiche nel corso di Statistica Inferenziale, presso l’Università di Milano-Bicocca”; with Francesca Gorini. *5° Convegno Nazionale sul Faculty Development*; Genova, Italy, Giugno 2024.
- “Empowering Phase II Clinical Trials to Reduce Phase III Failures”. *30th Annual European Meeting, Drug Information Association*; Basel, Switzerland, April 2018.

- “Optimal Ethical Balance for Phase III Trials Planning”, with L. De Capitani. *53rd Riunione Scientifica della Società Italiana di Statistica*; Firenze, Italy, June 2017.
- “Improving RP estimation and preserving RP-testing, through the introduction of some new families of estimators”, with L. De Capitani. *XVIII Workshop on Quantitative Finance*; Milano, Italy, January 2017.
- “RP-estimation and testing for some common nonparametric tests”. *Joint Meeting of International Biometric (IBS) Swiss-Austro and Italian Regions*; Milano, Italy, June 2015.
- Satellite Course for the Society for Clinical Trial - SCT: “Adaptive Designs: Overview, Hurdles, Examples & Software”. *36th Annual Meeting, Society for Clinical Trials*; Arlington – Virginia (USA), May 2015.
- “Profit Evaluations when Adaptation by Design is Applied”. *27th Annual European Meeting, Drug Information Association*; Paris, France, April 2015.
- “Allocating resources in Phase II and III Trials to Optimize Gain through Adaptation by Design”. *35th Annual Meeting, Society for Clinical Trials*; Philadelphia – Pennsylvania (USA), May 2014.
- “Reproducibility Probability Estimation and Testing for some common nonparametric tests”; with L. De Capitani. *46^a Riunione Scientifica della Società Italiana di Statistica*; Roma, Italy, June 2012.
- “Reproducibility Probability Testing for the Wilcoxon rank-sum test”; with L. De Capitani. *45^a Riunione Scientifica della Società Italiana di Statistica – Riunione satellite - Padova: Statistica per problemi complessi*; Padova, Italy, June 2010.
- “On power estimation – with applications to clinical trials”. Department of Statistics - Stanford University; California (USA), August 2010.
- “New methods for estimating the sample size of an experiment with binary random outcome”. Enginsoft CAE (Computer Assisted Engineering) users meeting; Stezzano, Italy, October 2007.
- “On the stability of statistical test results”. Department of Statistics - Stanford University; California (USA), August 2006.
- “On the Stability of Statistical Tests”. *Joint Statistical Meeting of the American Statistical Association*; Seattle – Washington (USA), August 2006.
- “Reproducibility Probability in Nonparametric Tests”. *27th Annual Meeting, Society for Clinical Trials*; Orlando – Florida (USA), May 2006.

- “Reproducibility Probability Estimation for the Wilcoxon-Rank-Sum Test”. *XLIII Riunione Scientifica della Società Italiana di Statistica*; Torino, Italy, June 2006.
- “Grid Based Full Portfolio Revaluation for VaR Computation”; with Fusai G., Chinelli R., Longo G., Marena M., Mariano L., Cappuccio R., Sgherri R., Regini L., Chierici W., Cocca E. *Proceeding of Science; Grid Technology for Financial Modeling and Simulation*; Palermo, Italy, February 2006.
- “Nonparametric Sample Size Estimation”. *26th Annual Meeting, Society for Clinical Trials*; Portland – Oregon (USA), May 2005.
- “Estimating Sample Size and Reproducibility in Nonparametrics”. Department of Medical Statistics - University of Wien; Wien, Austria, November 2005.
- “Sample Size Estimation and Reproducibility Probability in Nonparametrics”. Department of Epidemiology and Biostatistics - Karolinska Institute; Stockholm, Sweden, October 2005.
- “Bootstrap Confidence Intervals for the Power of Statistical Tests” Department of Statistics - Stanford University; California (USA), September 2005.
- “Nonparametric estimation of the sample size”. Department of Mathematics - Politecnico di Torino; Torino, Italy, April 2005.
- “A general method for estimating the power of statistical tests”. Department of Mathematics - Università di Genova; Genova, Italy, October 2004.
- “The Emotionality of the p-Value, the Rationality of the Post-Hoc Power: How to Interpret the Results of Statistical Tests”. D. *XLII Riunione Scientifica della Società Italiana di Statistica*; Bari, Italy, June, 2004.
- “Copulas and Independence Tests”. Department of Mathematics - Politecnico di Torino; Torino, Italy, February 2003.
- “Theoretical Aspects of Power Estimation for Permutation Tests”. Department of Probability and Statistics - Université Paris-VI; Paris, France, February 2002.
- “Exact conditional inference on h -sample problems for categorical data using algebraic algorithms”; with F. Rapallo. *XLI Riunione Scientifica della Società Italiana di Statistica*; Milano, Italy, June 2002.
- “Modeling Bivariate Dependence - with application to efficiency of dependence tests”; with E. Vespa. *XLI Riunione Scientifica della Società Italiana di Statistica*; Milano, Italy, June 2002.

- “Bootstrap Estimate of the Power and Sample Size Determination for Permutation Tests”. *XL Riunione Scientifica della Società Italiana di Statistica*; Florence, Italy, April 2000.
- “Nonparametric Power Computation for Permutation Tests”. University Center for Statistics – Katholieke Universiteit; Leuven, Belgium, August 2000.
- “Smoothed Bootstrap on the Correlation Model, with MCMC Numerical Computation”; with F. Rapallo. *SCO99: Modelli Complessi e Metodi Computazionali Intensivi per la Stima e la Previsione*; Venice, Italy, September 1999.
- “Discriminant Analysis”. Institute of Statistics - Università di Genova, Italy, May 1994.
- “The Bootstrap method”. Institute of Statistics - Università di Genova, Italy, June 1992.

SOFTWARE

- *SP4CT – Success Probability for Clinical Trials (2014)*.
SP4CT is a web application (implemented in Ruby-on-rails) showing the behavior of sample size estimators for phase III trials, the probabilities of success of phase II and phase III trials, and the randomness of profits within drug development (see www.sp4ct.com; user: guest_app@gmail.com; pw: *application*).
- *NP-SIZE – Sample size for nonparametric tests (2000)*.
NP-SIZE is a simple DOS tool (implemented in Fortran99) with friendly interface, to compute the sample size for nonparametric tests on the basis of pilot data. NP-SIZE embeds bootstrap techniques for sample size computations.

Conferences and talks on software tools

- “The software SP4CT: success probability for clinical trials”. *PCT Conference 2016* (Partnership in Clinical Trials); Vienna, Austria, November 2016.
- “The program NP-SIZE: new features for power computation on nonparametric tests”. *COMPSTAT2002*; Berlin, Germany, August 2002.
- “NP-SIZE: a Program to Compute Power and Sample Size for Nonparametric Tests”. *COMPSTAT2000*; Utrecht, Netherland, August 2000.

SELECTED MENTORING AND CONTRACT RESEARCHER SUPERVISIONS

- F. Rapallo: "The linear model under weak hypothesis: a smoothed bootstrap approach, with MCMC computation ", 1997/1998, Università di Genova, Italy.
- E. Vespa: “Dependence functions and nonparametric dependence tests”, 2001/2002, Università di Genova, Italy.
- L. De Capitani: “Nonparametric statistical methods for geography and tourism”, 2009-2010, Università del Piemonte Orientale, Italy.

- N. Accoto: “Statistical methods for estimating the experimental sample size”, 2009-2010, Università del Piemonte Orientale, Italy.
- L. De Capitani: “Reproducibility Probability Estimation: theory and application in biostatistics and finance”, 2013-2017, Università degli Studi di Milano-Bicocca, Italy.

TEACHING

Università degli Studi di Genova, Dep of Economics

- “Statistics – basic course”, 2022-present.
- “Economic Statistics – inferential methods”, 2022-present.

Università degli Studi di Milano–Bicocca, Faculty of Economics

- “Statistical Methods”, 2014-2022.
- “Probability, Distributions and Multiple Regression”, 2011-2013.
- “Industrial Statistics”, 2010-2022.

Università del Piemonte Orientale, Faculty of Economics

- “Statistics – basic course”, 1999-2010.
- Master in *Management of financial traders*: “Quantitative methods for finance”, 2004-2010.
- “Quantitative methods for tourism”, 2007-2010.
- Master in *Companies economics and management*: “Quantitative methods for market analysis”, “Sampling techniques”, “Statistical quality control”, 2003, 2004.

Université de Nice Sophia-Antipolis (France), I.U.T (Institute Universitaire Technologique) S.T.I.D (Statistique et Traitement Informatique des Données)

- “Sampling techniques”, 2003-2005.
- “Statistical quality control”, 2002.
- “Forecasting methods for data-mining”, 1999-2001.
- “Estimation theory, confidence intervals, hypothesis testing”, 1998, 1999.

Università di Genova, Faculty of Biology

- “Applied statistics with Minitab”, 1995-1998.

Università di Genova, Faculty of Economics

- “An introduction to probability”, 1998.

Sincerely yours

Daniele De Martini

A handwritten signature in black ink, appearing to read "Daniele De Martini", followed by a period.