Curriculum Vitae

Personal Data

Name: Bühlmann, Peter Lukas.

Born: April 12, 1965 in Zürich, Switzerland.

Citizenship: Switzerland.

Family status: Married, four children.

Education

1990–1993: PhD studies at ETH Zürich, Switzerland.

1985–1990: Studies in mathematics at ETH Zürich, Switzerland.

Positions

2013–present: Chair of the Department of Mathematics, ETH Zürich, Switzerland.

2004–present: Full Professor, Department of Mathematics, ETH Zürich, Switzerland.

2001–2004: Associate Professor, Department of Mathematics, ETH Zürich, Switzerland.

1997–2001: Assistant Professor, Department of Mathematics, ETH Zürich, Switzerland.

1995–1997: Neyman Assistant Professor, Department of Statistics, University of California, Berkeley.

1994–1995: Postdoctoral Research Fellow at University of California, Berkeley. Supported by the Swiss National Science Foundation.

Affiliations

2005–2013: Group Leader in Competence Center for Systems Physiology and Metabolic Diseases (ETH Zürich and University of Zürich)

2012: Founding member of ETH Zürich/MPI-IS Competence Center on Learning Systems

2014–current: Member of Competence Center for Personalized Medicine (University of Zürich and ETH Zürich)

Awards and Honours

2018: Invited speaker at the International Congress of Mathematicians 2018. Rio de Janeiro. (Forthcoming).

2018: Neyman Lecture. Annual Meeting of the Institute of Mathematical Statistics & 12th Intern. Vilnius Conference. Vilnius. (Forthcoming).

2017: Doctor Honoris Causa. Université Catholique de Louvain.

2016: James Francis Hannan Visiting Scholar. Michigan State University.

2016: Highly Cited Researcher 2016 (in mathematics) by Thomson Reuters. See http://highlycited.com/.

2016: Fellow of the American Statistical Association.

2016: IAS Senior Scholar-in-Residence 2016, Institute for Advanced Studies/ Park City Mathematics Institute.

2016: Read paper to the Royal Statistical Society, London ('Causal inference using invariant prediction: identification and confidence intervals').

Joint with J. Peters and N. Meinshausen.

2015: Highly Cited Researcher 2015 (in mathematics) by Thomson Reuters.
See `http://highlycited.com/`.

2015: Forum Lectures, European Meeting of Statisticians 2015, Amsterdam.

2014: Highly Cited Researcher 2014 (in mathematics) by Thomson Reuters.
See `http://highlycited.com/`.

2014: Distinguished Lecturer at the Chinese Academy of Sciences, Beijing.

2013: Winton Research Prize, London.

2012: Golden Tricycle Award (for most family-friendly supervisor), ETH Zürich.

2012: 14th Bahadur Memorial Lecture, University of Chicago.

2012: 5th Woodroofe Lecture, University of Michigan, Ann Arbor.

2011: 5th Pao-Lu Hsu Lecture, sponsored by Peking University and Microsoft Research Asia. Peking.

2010: Read paper to the Royal Statistical Society, London ('Stability Selection'). Joint with N. Meinshausen.

2010–2012: Co-Editor of the Annals of Statistics.

2009: Medallion Lecture, sponsored by the Institute of Mathematical Statistics; Joint Statistical Meetings, Washington.

2006: Fellow of the Institute of Mathematical Statistics (IMS).

1993: Award for Excellent Young Scientists from ETH Zürich.

1990: Pólya Prize: Best 'diploma' in mathematics from ETH Zürich.

Research interests

Statistics, Machine Learning, Computational Biology
(ranging from methodology and mathematical theory to interdisciplinary research in biology and bio-medicine)

PhD students (main advisor)
1. 2002: Fiorenzo Ferrari, ETH Zürich.
2. 2002: Francesco Audrino, ETH Zürich.
3. 2004: Marcel Dettling, ETH Zürich.
4. 2006: Roman Lutz, ETH Zürich.
5. 2006: Nicolai Meinshausen, ETH Zürich.
6. 2008: Markus Kalisch, ETH Zürich.
7. 2008: Lukas Meier, ETH Zürich.
8. 2009: Corinne Dahinden, ETH Zürich.
9. 2010: Nicolas Städler, ETH Zürich.
10. 2011: Jürg Schelldorfer, ETH Zürich.
11. 2012: Bernd Fellinghauer, ETH Zürich.
12. 2012: Daniel Stekhoven, ETH Zürich.
13. 2012: Philipp Rütimann, ETH Zürich.
14. 2012: Sarah Gerster, ETH Zürich.
15. 2012: Jonas Peters, ETH Zürich.
16. 2013: Manuel Koller, ETH Zürich.
17. 2013: Alain Hauser, ETH Zürich.
18. 2015: Jacopo Mandozzi, ETH Zürich.

19. 2015: Christopher Nowzohour, ETH Zürich.
20. 2015: Anna Drewek, ETH Zürich.
21. 2016: Chenchen Zhu, ETH Zürich and EMBL Heidelberg.
22. 2016: Ruben Dezeure, ETH Zürich.
23. 2016: Jan Ernest, ETH Zürich.
24. 2016: Laura Buzdugan, ETH Zürich.
25. ongoing: Shu Li, ETH Zürich.
26. ongoing: Nicolas Bennett, ETH Zürich.
27. ongoing: Niklas Pfister, ETH Zürich.
28. ongoing: Solt Kovács, ETH Zürich.
29. ongoing: Britta Velten, ETH Zürich and EMBL Heidelberg.
30. ongoing: Claude Renaux. ETH Zürich.

Supervision of postdoctoral researchers
1. 2002–2005: Anja Wille
2. 2006–2009: Juliane Schäfer
3. 2008–2011: Nicole Bruni
4. 2012: Caroline Uhler
5. 2013–2014: Ewa Szczurek (joint with Niko Beerenwinkel)
6. 2013–2014: Jonas Peters

Selected keynote or special talks at Conferences
2017: Opening Lecture. International Meeting of the Psychometric Society
     (IMPS 2017). Zurich.
2017: Distinguished Speaker. IMS-China International Conference on
     Statistics and Probability 2017, Nanning, China.
2016: International Conference on Robust Statistics (ICORS 2016),
     Geneva, Switzerland.
2016: Distinguished Lecturer. 4th IMS-Asian Pacific Rim Meeting,
     Hong Kong.
2016: Minitutorial at SIAM Conference on Uncertainty Quantification (UQ16),
     Lausanne, Switzerland.
2016: 2nd UCL Workshop on the Theory of Big Data, London, UK.
2015: 31st Conference on Uncertainty in Artificial Intelligence (UAI),
     Amsterdam, Netherlands.
2015: Forum Lectures, European Meeting of Statisticians 2015,
     Amsterdam, Netherlands.
2015: Sackler Colloquium "Drawing Causal Inference from Big Data",
     National Academy of Sciences (USA), Washington DC, USA.
2014: Statistische Woche 2014, Hannover, Germany.
2014: 21st CompStat conference, Geneve, Switzerland
2014: 2nd ISNPS conference, Cadiz, Spain.
2014: 8th PLS 2014 conference, Paris, France.
2014: ENBIS-SFdS spring meeting, Paris, France.
2014: 17th International Conference on Artificial Intelligence and Statistics
     (AISTATS), Reykjavik, Iceland.
2013: 5th SPARS conference, Lausanne, Switzerland.

2013: 2nd WIPFOR conference, Paris, France.
2012: 5th ERCIM conference, Oviedo, Spain.
2011: Distinguished Speaker. IMS-China International Conference on Statistics and Probability 2011, Xian, China.
2010: Tutorial Lecture at 24th NIPS conference, Vancouver, Canada.
2010: 39th Lunteren Stochastics Meeting, Lunteren, Netherlands.
2010: 23rd NORDSTAT, Voss, Norway.
2009: XI CLAPEM conference, Caracas, Venezuela.
2009: Medallion Lecture (IMS) at JSM, Washington DC., USA.
2008: useR 2008, Dortmund, Germany.

Other activities

- Numerous invited talks at conferences and workshops.

- Organizer and member of scientific program committees of numerous workshops and conferences.

- Various grants from Swiss National Science Foundation, SystemsX.ch, and industry.

- Scientific board member of Centro Stefano Franscini (conference center of ETH Zürich in Ascona, Ticino).

- Scientific advisory board for "Bioinformatics & Exploratory Biostatistics group" at Roche (Basel, Switzerland).

Publications

Complete list at: `http://stat.ethz.ch/~buhlmann/publications/`
See also Google Scholar at: `http://scholar.google.com/citations?user=3r-fWJwAAAAJ&hl=en`

Selected publications in statistical methodology and theory:

1. P. Bühlmann (1997). Sieve Bootstrap for time series. *Bernoulli 3*, 123–148.

2. P. Bühlmann and A.J. Wyner, A.J. (1999). Variable length Markov chains. *Annals of Statistics 27*, 480–513.

3. P. Bühlmann and B. Yu (2002). Analyzing bagging. *Annals of Statistics 30*, 927–961.

4. P. Bühlmann and B. Yu (2003). Boosting with the L_2 loss: regression and classification. *Journal of the American Statistical Association 98*, 324–339.

5. N. Meinshausen and P. Bühlmann (2006). High-dimensional graphs and variable selection with the Lasso. *Annals of Statistics 34*, 1436–1462. Appeared as "New Hot Paper" in Essential Science Indicators

(cited among the top one-tenth of one percent (0.1%) in a bimonthly period)*.

6. L. Meier, S. van de Geer and P. Bühlmann, P. (2008). The Group Lasso for logistic regression. *Journal of the Royal Statistical Society: Series B, 70*, 53–71.

7. M.H. Maathuis, M. Kalisch and P. Bühlmann (2009). Estimating high-dimensional intervention effects from observational data. *Annals of Statistics 37*, 3133–3164.

8. N. Meinshausen and P. Bühlmann (2010). Stability selection. *Journal of the Royal Statistal Society: Series B (discussion paper) 72*, 417–473.

9. C. Uhler, G. Raskutti, P. Bühlmann and B. Yu (2013). Geometry of faithfulness assumption in causal inference. *Annals of Statistics 41*, 436–463.

10. S. van de Geer and P. Bühlmann (2013). l0-penalized maximum likelihood for sparse directed acyclic graphs. *Annals of Statistics 41*, 536–567.

11. P. Bühlmann (2013). Statistical significance in high-dimensional linear models. *Bernoulli 19*, 1212–1242.

12. S. van de Geer, S., P. Bühlmann, Y. Ritov and R. Dezeure (2014). On asymptotically optimal confidence regions and tests for high-dimensional models. *Annals of Statistics 42*, 1166–1202.

13. N. Meinshausen and P. Bühlmann (2015). Maximin effects in inhomogeneous large-scale data. *Annals of Statistics 43*, 1801–1830.

14. J. Peters, P. Bühlmann and N. Meinshausen (2015). Causal inference using invariant prediction: identification and confidence intervals. *Journal of the Royal Statistical Society: Series B (discussion paper) 78*, 947–1012.

15. P. Bühlmann and S. van de Geer (2011). Statistics for High-Dimensional Data: Methods, Theory and Applications. *Springer Series in Statistics. Springer.* (556 pages).

Selected publications in interdisciplinary applications:

1. A. Wille, P. Zimmermann, E. Vranova, A. Fürholz, O. Laule, S. Bleuler, L. Hennig, A. Prelic, P. von Rohr, L. Thiele, E. Zitzler, W. Gruissem and P. Bühlmann (2004). Sparse graphical Gaussian modeling of the isoprenoid gene network in Arabidopsis thaliana. *Genome Biology 5(11) R92*, 1-13.

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*See http://www.esi-topics.com/nhp/

2. J.J. Goeman and P. Bühlmann (2007). Analyzing gene expression data in terms of gene sets: methodological issues. *Bioinformatics 23*, 980–987.

3. M.H. Maathuis, D. Colombo, M. Kalisch and P. Bühlmann (2010). Predicting causal effects in large-scale systems from observational data. *Nature Methods 7*, 247–248.

4. S. Gerster, E. Qeli, C.H. Ahrens and P. Bühlmann (2010). Protein and gene model inference based on statistical modeling in k-partite graphs. *Proceedings of the National Academy of Sciences 107*, 12101–12106.

5. S. Gerster, T. Kwon, C. Ludwig, M. Matondo, C. Vogel, E. Marcotte, R. Aebersold and P. Bühlmann (2014). Statistical approach to protein quantification. *Molecular and Cellular Proteomics 13*, 666–677.

6. L. Buzdugan, M. Kalisch, A. Navarro, D. Schunk, E. Fehr, E. and P. Bühlmann (2016). Assessing statistical significance in multivariable genome wide association analysis. *Bioinformatics 32*, 1990–2000.

7. N. Meinshausen, A. Hauser, J.M. Mooij, J. Peters, P. Versteeg and P. Bühlmann (2016). Methods for causal inference from gene perturbation experiments and validation. *Proceedings of the National Academy of Sciences 113*, 7361–7368.