## CURRICULUM VITAE FOR JOHN TYSSEDAL

**Born:** 28.04.1953 in Norway

### Education

| | |
|---|---|
| Cand.mag Department of mathematics, University of Bergen | 1977 |
| Pedagogical seminar, University of Bergen | 1979 |
| Cand.real Department of Mathematics, University of Bergen | 1980 |
| Dr. scient. Department of Mathematics, University of Bergen | 1990 |

### Previous Positions held:

| | |
|---|---|
| NAVF scholarship | 1980- 1983 |
| Assistant Professor, Norwegian Agriculture University, Ås | 1984 (6 months) |
| NFFR scholarship | 1984/85 |
| Assistant Professor, NTH , Trondheim | 1985 - 1990 |
| Associate Professsor, NTH/NTNU, Trondheim | 1990 – 2014 |
| Professor NTNU | 2014 - |

### Teaching Experience

Basic Statistics, Experimental Design, Industrial Statistics, Multivariate Analysis, Probability and Asymptotic Techniques, Regression Analysis, Stationary Stochastic Processes, Time Series Analysis. Linear Statistical Models. Statistical Inference.

Participated in courses in Ouality Improvement Methods for industry and an internet based basic statistic course for High-school teachers.

Designed and taught a course in Experimental Design for Ph. D. students at Department of Informatics and Computational Biology Unit, BCCS, University of Bergen fall 2009. Responsible for an internet based course in statistics for High-school teachers spring 2013, within the Department of mathematics distance education program Delta.

**Formal education**: One semester of formal training in pedagogics, in Norway called pedagogical seminar, fall 1979.

### Research interest

Time series and Design of Experiments. Currently Design of Experiments and active learning.

### Research Experience from Foreign Institutions:

| | |
|---|---|
| University of Texas, Austin. Department of Operation Research | 1981 – 1982 |
| Department of Statistics and Center for Quality and Productivity Improvement, University of Wisconsin, Madison (sabbatical) | 1992 - 1993 |
| Department of Statistics and Center for Quality and Productivity Improvement, University of Wisconsin, Madison (sabbatical) | 1999 - 2000 |

**Supervision**

Phd-students.
Lars Ødegård (1994), Randi Hammervold (1998), Oddgeir Samset (1999), Kjetil Kvernsmo, UIO (2016) (co-supervisor), Shahrukh Hussain (2017), Muhammad Azam Chaudry (2019), Davide Cacciarelli (2024) (co-supervisor). Yngvild Hole Hamre (2024).

Master students.
71

**External examiner of Licentiate thesis**
Martin Arvidsson (2000) Dispersion analysis in Robust Design Experimentation. Chalmers University of Technology

**External member of PhD committees**
Kirsten Bjørkestøl (2004), Modelling and optimization of processes with main emphasis on two-step strategies. Norwegian University of Life sciences.
Henrik René Cederkvist (2006) Optimization, prediction and Restricted variable Selection in Linear Models. Norwegian University of Life Science.
Eric Vanhatalo (2009) On Design of Experiments in Continuous Processes. Luleå University of Technology.
Christian Dehlendorf (2010) Design of Computer Experiments, Denmark Technical University.
Peder Lundkvist (2015). Application of Statistical methods. Challenges Related to Continuous Industrial Processes. Luleå University of Technology.
Sadiah Aljeddani (2018). Statistical Analysis of Data from Experiments Subject to Restricted Randomization. University of Southhampton.

**Internal member of PhD committees**
A lot.

**Administrative work:**
Pedagogical coordinator 1987-1992. Faculty of Physics and Mathematics
Group leader statistics 1990-1992, 2000-2004, 2009 -2013
Vice chair Department of Mathematical Sciences: 1990-1992, Spring: 2004, 2005-2006 (3 semesters), 2008-2009 (two semesters), 2015 (one semester).
Department chair: Spring: 2007.
Leader of the program council for the 5. year master program for High-School teachers in mathematics and natural sciences 2011-2012, 2014 -2019

**Administrative work outside the Department.**
Leader of the organization committee for the ENBIS conference 2022
Leader of the Trondheim Statistical Association 2020-2023

**Associate editor**
Quality Technology and Quantitative Management

**Referee**
Technometrics, Journal of Applied Statistics, Quality and Reliability Engineering International, Journal of Statistical Theory and Practice, Statistical paper, International Journal of Production Research, Journal of Statistical Planning and Inference, Quality Technology and Quantitative

Management, Iranian Journal of Science and Technology, Metrika, Journal of Computational and Applied Mathematics.


**Editorial experience**
Editor TG 2001-2003
Edited the special ENBIS issue of Quality and Reliability Engineering International in 2007.


**Publications and reports**

1. Tyssedal, J.S. and Tjøstheim, D. (1982) Autoregressive processes with a time dependent variance. *Journal of Time Series Analysis*, Vol. 3. No. 3. Pp. 209-217
2. A. Charnes, W. W. Cooper and J. Tyssedal, Khinˇcin-Kullback-Leibler estimation with inequality constraints. *Math. Operationsforsch. Statist. Ser. Optim.* 14 (1983), no. 3, 377–380.
3. Tyssedal, J.S. and Tjøstheim, D. (1988). An Autoregressive Model with Suddenly Changing Parameters and an Application to Stock market Prices. *Journal of the Royal Statistical Society Series C.* Vol. 37. No. 3. pp.353-369.
4. Bovim, G, Aasland, G.G., Tyssedal, J. S. (1990). Endring i bruk av alkohol og tobakk under rekruttskolen. *Tidskrift for Den Norske Legeforening*, 110 (13), 1705-6
5. Tyssedal, J. (1993). Projections in the 12-run Plackett and Burman Design. *Technical report* 106, 1993. Center for Quality and Productivity Improvement University of Wisconsin, Madison.
6. Tyssedal, J. (1996). Ei undersøking av faktorar som påverkar studiekvalitetetn på NTH. *UNIPED* nr. 2/1996, 30-37.
7. Box, G. E. P and Tyssedal, J. (1996). Projective Properties of Certain Orthogonal Arrays. *Biometrika*, 84, 4, 950-955.
8. Gimse, R., Bjørgen, I. A., Tjell, C., Tyssedal, J. and Bø, K. (1997). Reduced Cognitive Functions in a Group of Whiplash Patients with Demonstrated Disturbances in the Posture Control System. *Journal of Clinical Experimental Neuropsychology, Vol. 19, No 1.*
9. Tyssedal, J. and Samset, O. (1997). Analysis of the 12 run Plackett and Burman design. *Technical Report* 1997, 8. Department of Mathematical Sciences. The Norwegian University of Science and Technology.
10. Samset, O. and Tyssedal, J. (1998). Study of the Box-Meyer Method for Finding Active Factors in Screening Experiments. *Technical Report* 1998, 5. Department of Mathematical Sciences. The Norwegian University of Science and Technology.
11. Samset, O. and Tyssedal, J. (1998). Two-level Designs with Good Projection Properties. *Technical Report* 1999, 12. Department of Mathematical Sciences. The Norwegian University of Science and Technology.
12. Samset, O. and Tyssedal, J. (1998). Repeat and Mirror-Image Patterns and Correlation Structures of Plackett-Burman Designs, their foldover and Half-Fractions. *Technical Report* 1998, 13. Department of Mathematical Sciences. The Norwegian University of Science and Technology.
13. Samset, O. and Tyssedal, J. (1998). Planning Follow-UP Runs to Screening Experiments. *Technical Report* 1998, 14. Department of Mathematical Sciences. The Norwegian University of Science and Technology.
14. Tyssedal, J. and Box, G. E. P. (2000) Sixteen Run Designs of High Projectivity for Factor Screening: Part II. *Technical Report* 2000, 7. Department of Mathematical Sciences. The Norwegian University of Science and Technology.

15. Box, G. E. P. and Tyssedal, J. (2001). Sixteen Run Designs of High Projectivity for Factor Screening. *Communications in Statistics - Simulation and Computation*, 30(2), 217-228.

16. Hammervold, R. and Tyssedal J. (2003). Properties and Applications of Goodness of Fit Indices for Structural Equation Models. *Frihet og Mangfold.* Festskrift Odd Arntzen. 2003.

17. Tyssedal, J. S. and Kulahci, M. Analysis of split-plot designs with mirror image pairs as sub-plots. *Quality and Reliability Engineering International* 2005;21(5):539-551

18. Gynnild, V; Tyssedal, J. S. and Lorentzen, L. Approaches to Study and the Quality of Learning. Some Empirical Evidence from Engineering Education . *International Journal of Science and Mathematics Education* 2005;3(4):587-607

19. Tyssedal, J. S. and Grinde, H. and Røstad, C. C. The Use of a 12-run Plackett-Burman Design in the Injection Moulding of a Technical Plastic Component. *Quality and Reliability Engineering International* 2006;22(6):651-657

20. Tyssedal, J. Industrial statistics: Quality management, application and development. *Quality and Reliability Engineering International* 2007;23 doi:10.1002/qre.880

21. Tyssedal, J. Plackett-Burman Designs. I: *Encyclopedia of Statistics in Quality and Reliability*: John Wiley & Sons 2008. ISBN 978-0-470-01861-3. s. 1361-1365

22. Tyssedal, J. Projectivity in Experimental Designs. I: *Encyclopedia of Statistics in Quality and Reliability*: John Wiley & Sons 2008. ISBN 978-0-470-01861-3. s. 1516-1520

23. Tyssedal, J and Samset, O. (2010). Supersaturated designs of projectivity P=3 or near P=3. *Journal of Statistical Planning and Inference.* Volume 140, Issue 4, Pages 1021-1029

24. Relander, T.O, Heiskel, B. and Tyssedal, J. (2011). The influence of the Joint between the Basement Wall and the Wood-frame Wall on the Airthightness of Wood-frame Houses. *Energy and Buildings* 43 (2011). Pages 1304-1314.

25. Tyssedal, J., Kulahci, M. and Bisgaard, S. (2011). Split-plot Designs with Mirror Image Pairs as Sub-plots. *Journal of Statistical Planning and Inference*. Volume 141, Issue 11. Pages 3686-3696.

26. Kjernsmo, K and Tyssedal, J (2013). Introducing Statistical Design of Experiments to SPARQL Endpoint Evaluation. *The Semantic Web*–ISWC 2013, 360-375

27. Tyssedal, J and Niemi, R. (2014) Graphical Aids for the Analysis of Two-level Non-regular Designs. *Journal of Computational and Graphical Statistics*, vol 23, 3, 678-699

28. Tyssedal, J and Kulahci, M (2015). Experiments for Multi-Stage Processes. *Quality Technology and Quantitative Management.* Vol 12 , 1, 2015.

29. Tyssedal,J and Hussain, S (2016). Factor screening in nonregular two-level designs based on projection based variable selection. Applied Statistics, Vol 43, No.3, p. 490-508

30. Hussain, S and Tyssedal J. (2016). Projection properties of blocked non-regular two-level designs. *Quality and Reliability Engineering International*, 32(8), pp. 3011-3021

31. Kulahci, M and Tyssedal, J. (2017). Split-plot designs for multistage Experimentation. Journal of Applied Statistics Vol 44, No. 3, p 493-510.

32. Tyssedal, J. S. and Chaudhry, A. M. (2017. The Choice of screening design. *Applied Stochastic Models in Business and Industry*, 33(6), pp. 662-673.

33. Chaudhry, M.A. and Tyssedal, J.S (2019). Assessing some aspects of factor

screening with non-normal responses. *Applied Stochastic Models in Business and Industry*

34. Gynnild, V and Tyssedal, J.S. (2020. Can students attitude and behaviors be changed by educational interventions ? A comparative case study. *Dansk Universitetspædagogisk Tidsskrift* (DUT), vol 16(29).

35 Tyssedal, John Sølve; Hamre, Yngvild Hole (2022). Preserving projection properties when regular two-level designs are blocked. *Journal of Statistical planning and Inference,* vol 221.

36. Cacciarelli, Davide; Kulahci Murat; Tyssedal, John Sølve (2022). Stream-based Active Learning with Linear Models. *Knowledgebased systems.* Vol 254.

37. Hamre, Yngvild Hole; Tyssedal, John Sølve. (2022) On the identification of active factors in non-regular two-level designs with a small number of runs. *Quality and Reliability Engineering International,* vol 38 (8).

38. D. Cacciarelli, M. Kulahci, J.S. Tyssedal. (2022. Online Active Learning for Soft Sensor Development using Semi-Supervised Autoencoders. *ICML Work-shop on Adaptive Experimental Design and Active Learning in the Real World.*

39. Cacciarelli, Davide; Kulahci, Murat; Tyssedal, John Sølve (2024). Robust online active learning. *Quality and Reliability Engineering International*. vol (40) (1), pp 277-296

40. Cacciarelli, Davide; Tyssedal, John Sølve; Kulahci, Murat; (2024). Real-time sampling strategies for regression with irrelevant features. *International journal of Semantic Computing.*

41. Hamre, Yngvild Hole; Tyssedal, John Sølve. (2024). A decoupling method for analyzing foldover designs. *Quality and Reliability Engineering International..*