

Curriculum Vitae

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Name	Sangita Bijoy Kulathinal nee Karia
Nationality	Indian
Year of birth	1970
Marital status	Married
Email	sangita.kulathinal@inseed.org

Position(s):

1. **Senior Researcher**, National Institute for Health and Welfare, Helsinki, Finland.
2. **Adjunct professor** of Statistics, University of Helsinki, Finland from November 2007
3. **Adjunct professor** of Biometry, University of Tampere, Finland from October 2008
4. **Adjunct faculty**, Department of Statistics, Manipal University, Manipal, India from February 2009

Voluntary:

1. **Secretary**, Indic Society for education and development (INSEED), Nashik, Maharashtra, India.
2. **Biostatistician**, Jan Swasthya Sahyog (JSS), Ganiyari, Bilaspur, Chhattisgarh, India.

Academic record:

1. B.Sc. (Statistics) 1990 - R.Y.K. College, Nashik (University of Pune), India
2. M.Sc. (Statistics) 1992 - Department of Statistics, University of Pune, India
3. M.Phil. (Statistics) 1994 - Department of Statistics, University of Pune, India
4. Ph.D. (Statistics) 1996 - Department of Statistics, University of Pune, India

Title of the Ph.D. Thesis: *Competing Risks and Coherent Systems: A Nonparametric Study Under Dependent Models*

Awards and achievements:

1. First rank in B.Sc. in the Science Faculty, University of Pune.
2. First rank in M.Sc. in the Science Faculty, University of Pune.
3. NBHM fellow for the period 1992-96.
4. UGC National Entrance Test for Lecturership

Memberships

1. Life member of the International Indian Statisticians Association (IISA)
(<http://www.intindstat.org/>)
2. Life member of the Indian Society for Medical Statistics (ISMS) (<http://www.isms-india.com/>)
3. Member of The Finnish Society of Biostatistics (<http://www.biostatistiikanseura.org/>)

Appointments:

1. Senior researcher, Department of Vaccines, National Institute for Health and Welfare, Helsinki, Finland - 01.04.2009 - to date.
2. Senior researcher, Department of Mathematics and Statistics, University of Helsinki, Helsinki, Finland - 01.07.2007 - 30.09.2008.
3. Senior researcher, Finnish Cancer Registry, Institute for Statistical and Epidemiological Cancer Research, Helsinki, Finland - 01.04.2007 - 30.06.2007.
4. Senior scientist, IC Health Scientific Secretariat, Centre for Chronic Disease Control, T-7, Green Park Extension, New Delhi - 110016, India - 20.01.2006 - 06.01.2007.
5. Senior researcher, Department of Mathematics and Statistics, University of Helsinki, Helsinki, Finland - 10.09.2006 - 10.12.2006.
6. Visiting statistician, Hunter New England Population Health, Newcastle, New South Wales, Australia - 01.05.2006 - 25.06.2006.
7. Senior researcher, International CVD Epidemiology Unit, National Public Health Institute, Finland - 05.08.1999 - 18.01.2006. Part-time appointment for the periods 16.11.2004 to 15.05.2005 and 01.09.2005 to 31.10.2005.
8. Visiting faculty, Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur, India - 16.11.2004 to 15.05.2005.
9. Statistical Consultant, Leiras Oy, Helsinki, Finland - February 1998 to April 1998.
10. Visiting statistician, Department of Statistics, Probability and Operations Research, Faculty of Technical Mathematics and Informatics, Delft University of Technology - October 1997 to December 1997.
11. Post-Doctoral Fellow, Rolf Nevanlinna Institute, University of Helsinki, Finland - October 1996 to September 1997.
12. Research Fellow, Department of Statistics, University of Pune, India - August 1992 to August 1995.

Teaching positions: (post-graduate level)

Institution	Position held	Period of appointment
Department of Statistics, University of Pune	Tutor	Aug. 1992 - Aug. 1995
	Lecturer	Sept. 1995 - Sept. 1996
	Guest lecturer	Jan. 1998 - May 1998
Department of Statistics, Panjab university	Lecturer	July 1998 - July 1999
Systems Analysis Laboratory, Helsinki Univeristy of Technology	Guest lecturer	Jan. 2000 - May 2000
Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur	Visiting faculty	Nov. 2004 - May 2005
Department of Mathematics and Statistics, University of Helsinki, Finland	University lecturer	Aug. 2005 - Oct. 2005

Extensive short-term courses:

Course (Capacity)	Organised by	Period
Nutritional problems in low income countries Food habits in Asia (Faculty)	Dept. of Food and Environmental Sciences, Division of Nutrition, University of Helsinki, Finland	21 Sept., 2010
Event history analysis (Faculty)	Dept. of Mathematics and Statistics, University of Helsinki, Finland	29 Mar. - 10 Apr., 2010 01-16 Sept., 2008
Hidden Markov Models (Faculty)	Department of Biostatistics, CMC Vellore, India	25-28 Jan., 2010
Bayesian computation using OpenBUGS and R (Organiser & faculty)	Department of Biostatistics, CMC Vellore, India INSEED, Nashik, India INSEED, Nashik, India	02-04 Mar., 2010 08-12 Dec., 2008 10-14 Dec., 2007
Statistical methods and sample size considerations in epidemiology and longitudinal data analysis (Organiser & faculty)	INSEED, Nashik, India	16-24 Nov., 2009
Nonparametric statistics	Dept. of Mathematics and Statistics University of Helsinki, Finland	01 Apr.-20 May, 2009
Statistical Analysis System: Workshop for beginners (Faculty)	Dept. of Statistics, Manipal University, India	25-26 Feb., 2009
Statistical Models and Practices in Epidemiology (Organiser & faculty)	INSEED, Nashik, India	24-28 Nov., 2008
Population-based survival analysis (Faculty)	Tampere School of Public Health University of Tampere, Finland	12-16 May, 2008

Research guidance and training experience:

- Doctoral supervision:
 - Olli Saarela: On probability-based inference under data missing by design, University of Helsinki (2010)
 - Currently supervising 4 students from Finnish as well as Indian universities
- Master's thesis in statistics (University of Helsinki, Finland).
- Training of researchers for applying statistical methods used in MORGAM, the multi-country health project.
- Organisation of an international *Data management and Statistics Training* workshop for Initiative for Cardiovascular Health Research in the Developing Countries (IC-HEALTH) from 22-24 March, 2006, New Delhi, India.
- Organisation of a workshop on *Social well-being and gender equity in a globalising world: Dialogue between India and Finland* for INSEED and The Family Federation of Finland, Helsinki, Finland from 27-28 November, 2007, Helsinki, Finland.
- See also *Extensive short-term courses* above.

Statistical consultancy experience:

1. Pharmaceutical industry
2. Sugar and food industry
3. Epidemiology and public health
4. Microarray data
5. Protein function data
6. Hydrogeology
7. Civil engineering department, Indian Institute of Technology, Kanpur

Conferences, Workshops etc.:

1. **Invited speaker** at the India 60 Finland 90: Social well-being and gender equity in a globalising world: Dialogue between India and Finland, Finnish-Indian Workshop, 27-28 November, 2007, Helsinki, Finland. Presented a paper - *Indian and Finnish societies as I see them*.

2. **Invited speaker** at the National Conference on Statistical Modelling and Inference, Department of Statistics, Shivaji University, Kolhapur, India, 12-14 February 2007. Presented a paper - *Conditional Likelihood Inference in a Case-Cohort Design: an Application to Haplotype Analysis*.
3. **Invited speaker** at the International Conference on Reliability and survival analysis, Indian Statistical Institute, Delhi, India, 20-22 December 2005. Presented a paper - *Modelling of stochastic covariate and event follow-up processes as partially observed marked point processes: a likelihood-based approach*.
4. **Invited speaker** at the International Conference on Recent Advances in Statistics, Indian Institute of Technology, Kanpur, India, 04-06 January 2005. Presented a paper - *Bayesian inference from case-cohort data with multiple end-points*.
5. **Invited speaker** at The 25th Annual Conference of the International Society for Clinical Biostatistics, Leiden, The Netherlands, 15-19 August 2004. Presented a paper - *MORGAM - Statistical issues of a large genetic follow-up study for cardiovascular disease (for the MORGAM Project)*.
6. **Invited speaker** for a workshop on Dependence structure in analysis of competing risks held at TUDelft, The Netherlands, 19-20 June 2003. Presented a paper - *Testing dependence between the failure time and failure modes: An application of enlarged filtration*.
7. **Invited speaker** at The XXII Conference of Indian Society for Probability and Statistics, National Seminar on Advances in Statistics & Annual Conference of Indian Bayesians, Pune, India, 11-14 August 2002. Presented a paper - *The MORGAM Project: Description and data quality assessment issues (for the MORGAM Project)*.
8. Attended the 52nd session of the International Statistical Institute, August 10-18, 1999, Helsinki, Finland.
9. Attended summer school on *Statistics and Probability* in June 1997, at Lahti, Finland.
10. Attended and presented a paper entitled *Confidence estimation of the joint survival function through competing risks data and further study* at the National Seminar on Reliability and Survival Analysis held at the Department of Statistics, University of Calcutta, Calcutta, during June 23-24 1995.
11. Attended a workshop on Stochastic Calculus held at the Department of Studies in Statistics, Mysore University, Mysore, from 13 March to 18 March, 1995.

12. Attended and presented a paper entitled *Competing risks in Bioassay: A nonparametric Bayesian approach* at the international workshop on Analysis of Censored data held at the Department of Statistics, University of Pune, Pune, from 28 December, 1994 to 1 January, 1995 and also assisted in organising the workshop.
13. Attended and presented a paper entitled *Confidence intervals and confidence bands for the joint survival functions in the competing risks framework* at the workshop on Reliability and Survival Analysis held at ISI, Calcutta from 28 February to 4 March, 1994.
14. Attended a conference sponsored by the Indian Society for Probability and Statistics held at University of Pune, Pune in December, 1993 and also assisted in organising the conference.

Statistical software experience

1. SAS (Statistical Application Software)
2. R and S-Plus - a language and environment for statistical computing
3. MATLAB/Octave
4. WinBUGS/OpenBUGS

Areas of special interest: Survival Analysis, Parametric and Non-Parametric Inference, Epidemiology, Statistics in Genetics, Design and analysis of Case-cohort studies and related designs, measurement error problems in regression (linear regression and Cox's regression).

Publications (in peer-reviewed journals):

1. **Kulathinal, S.**, Shalabh, Joseph, B. (2011). Analysis of pooled time series and spatial data with an application to water level data. *Journal of Applied Statistical Science*, 18(3).
2. Gasbarra, D., **Kulathinal, S.**, Pirinen, M., Sillanpää, M. (2011). Estimating frequencies of ascertained haplotypes by combining genetic data from large DNA pools with database information. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 8(1): 36-44.
3. Goenka, S., Tewari, A., Arora, M., Stigler, M.H., Perry, C.L., Arnold, S., **Kulathinal, S.**, and Reddy, K.S. (2010). Process Evaluation of a Tobacco Prevention Program in Indian Schools - Methods, Results and Lessons Learnt. *Health Education and Research*, 25(6): 917-935.
4. Chatterjee, B., **Kulathinal, S.**, Bhargava, A., Jain, Y., Kataria, R. (2009). Anti-microbial resistance stratified by risk factor among Escherichia coli strains isolated from the urinary tract at a rural clinic in Central India. *Indian Journal of Medical Microbiology*, 27(4): 325-328.
5. Saarela, O., **Kulathinal, S.**, Karvanen, J. (2009). Joint analysis of prevalence and incidence data using conditional likelihood. *Biostatistics*, 10(3): 575-587.
6. Asplund K, Karvanen J, Giampaoli S, Jousilahti P, Niemel M, Broda G, Cesana G, Dallongeville J, Ducimetriere P, Evans A, Ferrires J, Haas B, Jorgensen T, Tamosiunas A, Vanuzzo D, Wiklund PG, Yarnell J, Kuulasmaa K, **Kulathinal S**, for the MORGAM Project. (2009). Relative risks for stroke by age, sex and population based on follow-up of 18 European populations in the MORGAM Project. *Stroke*, 40: 2319-2326.
7. **Kulathinal, S.**, Shalabh, Joseph, B. (2008). Analysis of pooled time series and spatial data with an application to water level data. *Journal of Applied Statistical Science*, (accepted for publication).
8. Pirinen, M., **Kulathinal, S.**, Gasbarra, D., Sillanpää, M. (2008). Estimating population haplotype frequencies from pooled DNA samples using PHASE algorithm. *Genetics Research*, 90(6): 509-524.
9. Silander, K., Alanne, M., Kristiansson, K., Saarela, O., Ripatti, S., Auro, K., Karvanen, J., **Kulathinal, S.**, Niemelä, M., Ellonen, P., Vartiainen, E., Jousilahti, P., Saarela, J., Kuulasmaa, K., Evans, A., Perola, M., Salomaa, V., Peltonen, L. (2008). Gender

Differences in Genetic Risk Profiles for Cardiovascular Disease. *PLoS ONE*, 3(10): e3615. doi:10.1371/journal.pone.0003615.

10. Saarela, O., **Kulathinal, S.**, Arjas, E., Läärä, E. (2008). Nested case-control data utilised for multiple outcomes: A likelihood approach and alternatives. *Statistics in Medicine*, 27(28), 5991-6008, DOI: 10.1002/sim.3416.
11. **Kulathinal, S.**, Gasbarra, D., Kinra, S., Ebrahim, S. and Sillanpää, M. for the Indian Migration Study Group. (2008). Estimation of additive genetic and environmental sources of quantitative trait variation using data on married couples and their siblings. *Genetics Research*, 90, 269-279.
12. Gupta, R., Arjas, E., **Kulathinal, S.**, Thomas, A. and Auvinen, P. (2008). Bayesian hierarchical model for estimating gene expression intensity using multiple scanned microarrays. *EURASIP Journal on Bioinformatics and Systems Biology*, Volume 2008, Article ID 231950, 11 pages. doi:10.1155/2008/231950.
13. Karvanen, J., **Kulathinal, S.**, Gasbarra D. (2008). Optimal designs to select individuals for genotyping conditional on observed binary or survival outcomes and non-genetic covariates. *Computational Statistics and Data Analysis*. Available on-line doi:10.1016/j.csda.2008.02.010.
14. Gupta, R., Somervuo, P., **Kulathinal, S.**, Auvinen, P. (2008). Optimal designs for microarray experiments with biological and technical replicates. In the *Recent Advances in Linear Models and Related Areas*, Edited by Shalabh and C. Heumann, Springer, pages 389-400.
15. Dewan, I. and **Kulathinal, S.** (2007). On confidence intervals for subquantiles under the competing risks set-up. *Journal of the Indian Statistical Association*, 45(2), 141-156.
16. **Kulathinal, S.**, Karvanen, J. , Saarela, O. and Kuulasmaa, K. (2007). Case-cohort design in practice – experiences from the MORGAM Project. *Epidemiologic Perspectives & Innovations*, 4:15 doi:10.1186/1742-5573-4-15. Available at: <http://www.epi-perspectives.com/content/4/1/15>.
17. Dewan, I. and **Kulathinal, S.** (2007). On testing dependence between time to failure and cause of failure when causes of failure are missing. *PLoS ONE*, 2(12): e1255. doi:10.1371/journal.pone.0001255.

18. Gupta, R., Ruosaari, S., **Kulathinal, S.**, Hollméc, J., Auvinen, P. (2007). Microarray image segmentation using additional dye - An experimental study. *Molecular and Cellular Probes*, 21, 321-328.
19. Saarela, O. and **Kulathinal, S.** (2007). Conditional Likelihood Inference in a Case-Cohort Design: an Application to Haplotype Analysis. *The International Journal of Biostatistics*, 3 (1), Article 1. Available at: <http://www.bepress.com/ijb/vol3/iss1/1>.
20. **Kulathinal, S.B.** and Arjas, E. (2006). Bayesian inference from case-cohort data with multiple end-points. *Scandinavian J Statistics*, 33, 25-36.
21. Komulainen, K., Alanne, M., Auro, K., Kilpikari, R., Pajukanta, P., Saarela, J., Eltonen, P., Salminen, K., **Kulathinal, S.**, Kuulasmaa, K., Silander, K., Salomaa, V., Perola, M., Peltonen, L. (2006). Risk Alleles of USF1 -Gene Predict Cardiovascular Disease of Women in Two Prospective Studies. *PLoS Genetics*, 2(2), e69.
22. **Kulathinal, S.**, Ghosh, L. (2006). On a Result for Finite Markov Chains. *International Journal of Mathematical Education in Science and Technology*, 37(4), 498-502.
23. Gasbarra, D., **Kulathinal, S.B.**, Dewan, I. and Nissinen, A. (2006). Testing dependence between the failure time and failure modes: An application of enlarged filtration. *Journal of Statistical Planning and Inference*, 136, 1669-1686.
24. Dewan, I. and **Kulathinal, S.B.** (2006). Accelerated testing in the presence of dependent competing causes of failure. *Journal of Statistics and Applications*, 1, 1-27.
25. Tolonen, H., Dobson, A., **Kulathinal, S.** for the WHO MONICA Project (2006). Assessing the quality of risk factor survey data: lessons from the WHO MONICA Project. *Eur J Cardiovasc Prevention Reheb*, 13, 104-114.
26. Tolonen, H., Dobson, A., **Kulathinal, S.** for the WHO MONICA Project (2005). Effect on trend estimates of the difference between survey respondents and non-respondents: results from 27 populations in the WHO MONICA Project. *Eur J Epidemiol*, 20, 887-898.
27. Evans, A., Salomaa, V., **Kulathinal, S.B.**, Asplund, K., Cambien, F., Ferrario, M., Perola, M., Peltonen, L., Shields, D., Tunstall-Pedoe, H., Kuulasmaa, K., for the MORGAM Project (2005). Cohort profile: MORGAM (an international pooling of cardiovascular cohorts), *International Journal of Epidemiology*, 34, 21-27.

28. Dewan, I., Deshpande, J. V. and **Kulathinal, S.B.** (2004). On testing dependence between time to failure and cause of failure via conditional probabilities. *Scandinavian Journal of Statistics*, 31, 79-91.
29. Dharmadhikari, A., **Kulathinal, S.B.** and Mandrekar, V. (2002). An algorithm for the estimation of minimal cut and path sets from field failure data. *Statistics and Probability Letters*, 58, 1-11.
30. **Kulathinal, S.B.**, Kuulasmaa, K. and Gasbarra, D. (2002). Estimation of an error-in-variables regression model when the variances of the measurement error vary between the observations. *Statistics in Medicine*, 21(8) 1089-1101.
31. **Kulathinal, S.B.** and Gasbarra, D. (2002). Testing equality of cause-specific hazard rates corresponding to m competing risks among K groups. *Lifetime Data Analysis*, 8(2), 147-161.
32. Salomaa, V.V., Rasi, V., **Kulathinal, S.B.**, Vahtera, E., Jauhiainen, M., Ehnholm, C., Pekkanen, J. (2002). Hemostatic factors as predictors of coronary events and total mortality; The FINRISK92 Hemostasis study. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 22, 353-358.
33. Gasbarra, D. and **Karia, S.R.** (2000). Analysis of competing risks by using Bayesian smoothing. *Scandinavian Journal of Statistics*, 27 (4), 605-617.
34. **Karia, S.R.** and Deshpande, J.V. (1999). Bounds for hazard gradients and rates in the competing risks set up. *Journal of Statistical Planning and Inference*, 75, 363-377.
35. **Karia, S.R.** and Deshpande, J.V. (1999). The response functions for the dependent competing risks. *Communications in Statistics-Theory and Methods*, 28(3&4), 947-963.
36. **Karia, S.R.**, Toivonen, J. and Arjas, E. (1998). Analysis of contraceptive failure data in IUD studies. *Contraception*, 58, 361-374.
37. Deshpande, J.V. and **Karia, S.R.** (1997). Bounds for the joint survival and incidence functions through coherent system data. *Advances in Applied Probability*, 29, 478-497.
38. Deshpande, J.V. and **Karia, S.R.** (1995). Modelling competing risks data via cumulative incidence functions. *I. A. P. Q. R.*, 20 , 79-91.
39. Deshpande, J.V. and **Karia, S.R.** (1995). Competing risks in Bioassay: A nonparametric Bayesian approach. in *Analysis of Censored Data*, IMS Lecture Notes-Monograph series, 27, 79-94.

40. Deshpande, J.V. and **Karia, S.R.** (1995). Confidence bounds for the joint survival function in the dependent competing risks setup. *Communications in Statistics-Theory and Methods*, 24 , No. 9, 2315-2327.

Web publications:

1. Saarela, O. and **Kulathinal S** for the MORGAM Project. Description and quality of baseline data: Awareness and treatment of high blood pressure and cholesterol. Available from:
URL: <http://www.ktl.fi/publications/morgam/qa/baseline/highbpchol/highbpcholqa.htm>
2. *India 60 and Finland 90 - Social well-being and gender equity in a globalising world: Dialogue between India and Finland.* (March 2008). Edited by Säävälä M and **Kulathinal S**. Available from: URL: <http://www.inseed.org/publ/2008/e-book/index.html>
3. Saarela O, Tolonen H, **Kulathinal S**, Niemelä M and Kuulasmaa K for the MORGAM Project. (December 2007). Description and quality of the baseline data: Smoking. Available from:
URL: <http://www.ktl.fi/publications/morgam/qa/baseline/smoking/smokeqa.htm>
4. *Description and quality assessment of MORGAM data.* (July, 2007). Edited by Niemelä M, **Kulathinal S** and Kuulasmaa K for the MORGAM Project. Available from: URL: <http://www.ktl.fi/publications/morgam/qa/contents.htm>, URN:NBN:fi-fe20071495.
5. **Kulathinal S** and Kuulasmaa K for the MORGAM Project. (July 2007). Description and quality of the cohorts. Available from:
URL: http://www.ktl.fi/publications/morgam/qa/baseline/qa_cohorts/cohortsqqa.htm
6. Kuulasmaa K, **Kulathinal S** and Niemelä M for the MORGAM Project. (July 2007). Description and quality of the baseline data: Introduction. Available from:
URL: http://www.ktl.fi/publications/morgam/qa/baseline/qa_data/dataqa.htm
7. Niemelä M, **Kulathinal S**, Joseph, B, Saarela, O and Kuulasmaa K for the MORGAM Project. (July 2007). Description and quality of baseline data: Height, weight, waist and hip measurements. Available from:
URL: <http://www.ktl.fi/publications/morgam/qa/baseline/anthropm/anthropmqa.htm>
8. Kuulasmaa K, Niemelä M and **Kulathinal S** for the MORGAM Project. (July 2007). Description and quality of baseline data: History of coronary heart disease, stroke and diabetes. Available from:
URL: <http://www.ktl.fi/publications/morgam/qa/baseline/history/historyqa.htm>

9. Niemelä M, **Kulathinal S**, Joseph, B, Saarela, O and Kuulasmaa K for the MORGAM Project. (July 2007). Follow-up data. Available from:
URL: <http://www.ktl.fi/publications/morgam/qa/followup/followup.htm>
10. **Kulathinal S**, Niemelä M, Kuulasmaa K. and contributors from Participating Centres for the MORGAM Project. (April, 2005) Description of MORGAM Cohorts. Available from: URL: <http://www.ktl.fi/publications/morgam/cohorts/index.html>, URN:NBN:fi-fe20051214.