Curriculum Vitae of HAKAN DEMIRTAS

University of Illinois at Chicago, School of Public Health, Division of Epidemiology and Biostatistics, MC923, Room 950, 1603 West Taylor Street, Chicago, IL, 60612.

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EDUCATION

08/1997-08/2003 **PHD** in Statistics, Pennsylvania State University, University Park, PA. Dissertation title: Multiple imputation for nonignorable dropout using Bayesian pattern-mixture models. Advisor: Dr. Joseph L. Schafer

09/1995-06/1997 **MBA** with Area of Concentration Economics, University of South Alabama, Mobile, AL.

09/1987-02/1993 **BS** in Electrical and Electronics Engineering, Bogazici University, Istanbul/Turkey.

PROFESSIONAL EXPERIENCE

08/2008-To date. Associate Professor of Biostatistics (with tenure), Division of Epidemiology and Biostatistics, School of Public Health, University of Illinois at Chicago.

08/2003-08/2008. Assistant Professor of Biostatistics, Division of Epidemiology and Biostatistics, School of Public Health, University of Illinois at Chicago.

08/2000-08/2003 Graduate Research Assistant, Center for Prevention Methodology, Pennsylvania State University.

08/1997-07/2000 Graduate Teaching Assistant, Department of Statistics, Pennsylvania State University.

06/1996-06/1997 Graduate Research Assistant in the Economics Department, College of Business Administration, University of South Alabama.

TEACHING EXPERIENCE

Pennsylvania State University:

Spring-1999: Led the recitation section of STAT200 (Introduction to Statistics).
Summer-2000: Taught STAT200.
Summer-1999, Fall-2000, Spring-2001, Fall-2001, Spring-2002: Taught STAT401 (Statistics and Probability for Engineers, Senior level).

University of Illinois at Chicago:

BSTT503 (Biostatistics Lab, Master's level-F03)
BSTT504 (ANOVA and Design, Master's level-S04)
BSTT510 (Biostatistics Methods I, Master's level-F22)
BSTT512 (Survival Analysis, Master's level-F04, F05, F06, F07)
BSTT524 (Biostatistical Tools, Master's level-F08, F09, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21, F22)
BSTT550 (Biostatistical Investigations, Master's level, S07, S09)
BSTT565 (Computational Statistics, Doctoral level-S05, F06, F08, F10, F12, F14, F16, F17, F18, F19, F20, F21, F22)
BSTT566 (Bayesian Statistics, Doctoral level-F05, F07, F09, F13, F15)
BSTT568 (Programming and Simulation in R, Graduate level-F07, F09, F10, F11, F12, F13, F14, F15, F16, F17, F18, F19, F20, F21)
BSTT594 (Theory and Practice of Multiple Imputation, Graduate level-S08)
BSTT595 (Biostatistics Research Seminar, Graduate level-F05, F09, F13, F19, F20, F21)

SERVICE TO THE UNIVERSITY

-Master's comprehensive exam committee- AY 03/04, 04/05, 06/07, 08/09
-Doctoral preliminary exam committee- AY 05/06, 06/07, 07/08, 08/09 (chair), 09/10 (chair), 10/11, 11/12, 12/13, 13/14 (chair), 14/15 (chair), 15/16 (chair), 16/17 (chair), 17/18 (chair), 18/19 (chair), 19/20 (chair), 20/21 (chair), 21/22 (chair), 22/23 (chair).
-Biostatistics faculty search committee- AY 14/15.

-Committee on Committees-July 2007 to July 2009
-Committee on Academic Progress-July 2007 to July 2009, July 2010 to July 2012
-Committee on Admissions and Recruitment Policies-July 2007 to July 2009
-Committee on Appointment, Promotion and Tenure-July 2014 to July 2020, July 2022 to date
-Elections Committee-August 2021- to date
-Executive Committee-July 2018 to July 2020
-Biostatistics Faculty Search Committee-AY 14/15
-Annual SPH Research and Practice Awards Day and Poster Competition Judge- AY 14/15, 15/16, 16/17, 17/18, and 18/19.

Doctoral dissertation advisor (Biostatistics):
-Irene Helenowski (2011). *Multiple imputation via a semi-parametric probability integral transformation.*
-Colin Hubbard (2017). *Extensions of the dynamic propensity score adjustment for longitudinal data.*
-Lauren Bailey (2018). *Improved strategies using the propensity score to estimate the effect of a healthcare policy.*
-Julia Xiong (2020). *An efficient oncology phase II/III development strategy using response and overall survival information.*
-Ran Gao (in progress)
-Tong Zhang (in progress)

Served in PhD committees of
-Kristin Rankin (Epidemiology, 2008)
-Sasha Guo (Biostatistics, 2008)
-Jungwha Lee (Biostatistics, 2009)
-Xue Li (Biostatistics, 2010)
-John Cursio (Biostatistics, 2011)
-Hong Li (Biostatistics, 2015)
-Mason Fidino (Ecology and Evolution, 2017)
-Fredrik Langi (Biostatistics, 2017)
-Nicole Kaminski-Ozturk (Educational Psychology, 2018)
-Ethan Arenson (Educational Psychology, TBD)
-Yu-Che Chung (Biostatistics, 2022)

-Hesen Li (Biostatistics, 2022)
-Ruizhe Chen (Biostatistics, 2022)

Mentorship:
- Lester Arguelles
- Xin Liu
- Rachael Jones

SERVICE TO THE PROFESSION

- Associate Editor of Journal of Statistical Software (May 2007-August 2021)

- Member of Advisory Board for Turkish Clinics Journal of Biostatistics (January 2009-to date)

- Referee for the following journals: *Statistics in Medicine (14), Journal of Royal Statistical Society Series C-Applied Statistics (2), Communications in Statistics-Theory and Methods, Journal of Statistical Computation and Simulation (6), Biometrical Journal, Multivariate Behavioral Research, American Statistician (2), American Journal of Epidemiology, Biostatistics, Substance Use and Misuse, Biometrics (3), Computational Statistics and Data Analysis (4), Journal of Statistical Software (5), Philosophical Transactions of the Royal Society, Communications in Statistics-Simulation and Computation, BMC Biomedical Research Methodology, Journal of Biopharmaceutical Statistics (3), Psychological Methods, Bone Marrow Transplantation, Sociological Methods and Research, Pharmaceutical Statistics, Turkish Clinics Journal of Biostatistics, Journal of Biometrics and Biostatistics, Journal of Multivariate Analysis, Anatolian Journal of Cardiology, The R Journal (2), Statistica Sinica, Observational Studies, Cogent Mathematics, British Journal of Mathematical and Statistical Psychology, Statistical Papers, International Statistical Review, Health Services and Outcomes Research Methodology, Medical Science Monitor, Psychological Methods.*

- Grant reviewer for US-Israeli Binational Science Foundation (2007).

- Book reviewer for Guilford Press, Applied Missing Data Analysis by Craig Enders (2009).

- Book reviewer for Chapman & Hall/CRC Press (2020)

- Ad-hoc grant reviewer for National Institute of Health (2013-2014-2015-2019).

- Grant reviewer for Medical Research Council, United Kingdom (2016).

RESEARCH SUPPORT

Milk Availability and Lactation Status in Mothers of Preterm & Term Infants. Project Number 5 R01 NR04994-03 (PI: Pamela Hill) 05/01/03 to 04/30/04, Annual direct cost: $259,923. (Co-I). Funded by National Institute of Nursing Research.

Homeless Mentally Ill Strategies of Maintaining Residential Stability. Project number DedH1339040320 (PI: Christine Helfrich) 05/01/05 to 04/30/06, Annual direct cost: $150,000. (Co-I). Funded by National Institute of Mental Health.

A Multivariate Probit Model for Health Services Research. Project Number 1 R01 MH67198-01a2 (PI: Hua Yun Chen) 05/01/05 to 04/30/06, Annual direct cost: $150,000. (Co-I). Funded by National Institute of Mental Health.

Mental Health Services for Foster Children. Project Number MH070580-01A2 (PI: Sonya Leathers), 09/30/05 to 08/31/10, Annual direct cost: $ 117,099. (Co-I). Funded by National Institute of Mental Health.

Asthma and Demolition in Chicago Public Housing. Project Number 1 K08 ES11302 (PI: Samuel Dorevitch) 05/02/02 to 03/31/07, Annual direct cost: $119,133. (Co-I). Funded by National Institute of Environmental Health Sciences.

Genetic Epidemiology of Osteoporosis. Project Number R01 AR045651 (PI: Xiping Xu) 09/06/00 to 03/31/07, Annual direct cost: $386,360. (Co-I). Funded by National Institute of Arthritis and Musculoskeletal and Skin Diseases.

Epidemiology of Metabolic Syndrome in Children. Project Number R01 HD049059 (PI: Xiaobin Wang). 01/01/05 to 12/31/09, Annual direct cost: $80,000. (Co-I). Funded by National Institute of Child Health and Human Development/ Children's Memorial Hospital, Chicago.

Establishing the Precursors of Osteoporosis in Children. Project Number R01 AG032227 (PI: Xiping Xu). 10/01/07 to 08/31/11, Annual direct cost: $206,630. (Co-I). Funded by National Institute of Arthritis and Musculoskeletal and Skin Diseases.

Sleep and Adiposity: A Prospective Twin Study. Project Number R01 HL0864619 (PI: Xiaobin Wang). 09/15/06 to 08/31/10, Annual direct cost: $55,000. (Co-I). Funded by NICHD / Children's Memorial Hospital, Chicago.

ACISR in Late Life Depression. Project Number 1 P30 MH085943-01 (PI: Hakan Demirtas). 07/1/09 to 12/31/11, Annual direct cost: $86,568. Housed in Weill Cornell Medical College. Funded by National Institute of Health.

Dissemination of Effective Mental Health Services in Foster Care. Project Number RC1 MH088732-01 (PI: Sonya Leathers). 09/25/09 to 09/24/11, Annual direct cost: $156,397. (Co-I). Funded by National Institute of Mental Health.

Addressing Mental Illness and Physical Comorbidities in Migrants and Their Families. Project Number 1D43TW009316-01A1 (PI: Steve Weine). 06/01/14 to 05/31/19, Total direct cost: $221,216. (Co-I). Funded by National Institute of Health.

Statistical Analysis of Occupational Exposure Data. Project Number K01 OH010537 (PI: Rachael Jones) 04/01/14 to 03/31/17, Total direct cost: $324,000. (Mentor). Funded by National Institute of Occupational Safety and Health.

Novel Multiple Imputation Methods for Incomplete Intensive Longitudinal Data. (PI: Hakan Demirtas). 04/01/16 to 03/31/17, Total direct cost: $20,000. Funded by University of Illinois at Chicago, School of Public Health.

Advancing Stepped Care for Women's Common Mental Disorders in an LMIC. Project number 1R21MH108363-01A1 (PI: Stevan Weine). 09/01/16 to 08/31/18, Total direct cost: $128,351. (Co-I). Funded by National Institute of Mental Health.

Low Intensity Family Support for Refugees in an LMIC. Project number 1R21MH117759 - 01 (PI: Stevan Weine). 07/01/18 to 06/30/20, Total cost: $357,857. (Co-I). Funded by National Institute of Mental Health.

Scaling-Up stepped care for women's mental health in primary care in an LMIC. 1RO1MH120660 - 01 (PI: Stevan Weine). 09/01/19 to 08/30/24, Total cost: $3,303,858. (Co-I). Funded by National Institute of Mental Health.

Mentoring network for global mental health research on social drivers of mental illnesses across the lifespan (gmhCONNECT).
R25MH125771-01A1 (PI: Stevan Weine). 04/01/2022 – 03/31/2027.
Total Cost: $970,040. Funded by National Institute of Mental Health.

PEER-REVIEWED STATISTICAL & METHODOLOGICAL PUBLICATIONS (JOURNAL ARTICLES and BOOK CHAPTERS)

1. Demirtas, H. & Schafer, J. L. (2003). On the performance of random-coefficient pattern-mixture models for non-ignorable drop-out. ***Statistics in Medicine***, Volume 22, Issue 16, 2553-2575.

2. Demirtas, H. (2004a). Simulation-driven inferences for multiply imputed longitudinal datasets. ***Statistica Neerlandica***, Volume 58, Issue 4, 466-482.

3. Demirtas, H. (2004b). Modeling incomplete longitudinal data. ***Journal of Modern Applied Statistical Methods***, Volume 3, Issue 2, 305-321.

4. Demirtas, H. (2004c). Assessment of relative improvement due to weights within generalized estimating equations framework for incomplete clinical trials data. ***Journal of Biopharmaceutical Statistics***, Volume 14, Issue 4, 1085-1098.

5. Demirtas, H. (2004d). Pseudo-random number generation in R for commonly used multivariate distributions. ***Journal of Modern Applied Statistical Methods***, Volume 3, Issue 2, 485-497.

6. Demirtas, H. (2005a). Multiple imputation under Bayesianly smoothed pattern-mixture models for non-ignorable drop-out. ***Statistics in Medicine***, Volume 24, Issue 15, 2345-2363.

7. Demirtas, H. (2005b). Bayesian analysis of hierarchical pattern-mixture models for clinical trials data with attrition and comparisons to commonly used ad-hoc and model-based approaches. ***Journal of Biopharmaceutical Statistics***, Volume 15, Issue 3, 383-402.

8. Demirtas, H. (2005c)**.** Pseudo-random number generation in R for some univariate distributions. ***Journal of Modern Applied Statistical Methods***, Volume 4, Issue 1, 300-311.

9. Demirtas, H. (2006). A method for multivariate ordinal data generation given marginal distributions and correlations. ***Journal of Statistical Computation and Simulation,*** Volume 76, Issue 11, 1017-1025.

10. Demirtas, H. & Hedeker, D. (2006). On "Tukey's gh distribution for multiple imputation". ***American Statistician,*** Volume 60, Issue 4, 348-349.

11. Demirtas, H. (2007a). Practical advice on how to impute continuous data when the ultimate interest centers on dichotomized outcomes through pre-specified thresholds. ***Communications in Statistics-Simulation and Computation***, Volume 36, Issue 4, 871-889.

12. Demirtas, H. (2007b). The design of simulation studies in medical statistics. ***Statistics in Medicine,*** Volume 26, Issue 24, 3818-3821.

13. Demirtas, H., Arguelles, L. M., Chung, H. & Hedeker, D. (2007). On the performance of bias-reduction techniques for variance estimation in approximate Bayesian bootstrap imputation. ***Computational Statistics and Data Analysis***, Volume 51, Issue 8, 4064-4068.

14. Demirtas, H. & Hedeker, D. (2007). Gaussianization-based quasi-imputation and expansion strategies for incomplete correlated binary responses. ***Statistics in Medicine***, Volume 26, Issue 4, 782-799.

15. Hedeker, D., Mermelstein, R. J. & **Demirtas, H.** (2007). Analysis of binary outcomes with missing data: missing=smoking, last observation carried forward, and a little multiple imputation. ***Addiction***, Volume 102, 1564-1573.

16. Leon, A. C., **Demirtas, H.** & Hedeker, D. (2007). Bias reduction with an adjustment for participants' intent to dropout of a randomized controlled clinical trial. ***Clinical Trials***, Volume 4, Issue 5, 540-547.

17. Demirtas, H. (2008a). On imputing continuous data when the eventual interest pertains to ordinalized outcomes via threshold concept. ***Computational Statistics and Data Analysis***, Volume 52, Issue 4, 2261-2271.

18. Demirtas, H. (2008b). Is the three-point system necessarily better than the two-point system in soccer? ***Interstat,*** Issue 10, 1-2.

19. Demirtas, H., Freels, S. A. & Yucel, R. M. (2008). Plausibility of multivariate normality assumption when multiply imputing non-Gaussian continuous outcomes: A simulation assessment. ***Journal of Statistical Computation and Simulation***, Volume 78, Issue 1, 69-84.

20. Demirtas, H. & Hedeker, D. (2008a). Imputing continuous data under some non-Gaussian distributions. ***Statistica Neerlandica***, Volume 62, Issue 2, 193-205.

21. Demirtas, H. & Hedeker, D. (2008b). An imputation strategy for incomplete longitudinal ordinal data. ***Statistics in Medicine***, Volume 27, Issue 20, 4086-4093.

22. Demirtas, H. & Hedeker, D. (2008c). Multiple imputation under power polynomials. ***Communications in Statistics-Simulation and Computation,*** Volume 37, Issue 8, 1682-1695.

23. Demirtas, H. & Hedeker, D. (2008d). On "Using calibration to improve rounding in imputation". ***American Statistician,*** Volume 62, Issue 4, 364-365.

24. Hedeker, D., Mermelstein, R. J. & **Demirtas, H.** (2008). An application of a mixed-effects location scale model for analysis of ecological momentary assessment (EMA) data. ***Biometrics***, Volume 64, Issue 2, 627-634.

25. Demirtas, H. (2009a). Multiple imputation under the generalized lambda distribution. ***Journal of Biopharmaceutical Statistics***, Volume 19, Issue 1, 77-89.

26. Demirtas, H. (2009b). Rounding strategies for multiply imputed binary data. ***Biometrical Journal,*** Volume 51, Issue 4, 677-688.

27. Demirtas, H. (2009c). Multiple imputation for longitudinal data under a Bayesian multilevel model. ***Communications in Statistics-Theory and Methods,*** Volume 38, Issue 16, 2812-2828.

28. Demirtas, H., Amatya, A., Pugach, O., Cursio, J., Shi, F., Morton, D. & Doganay, B. (2009). Accuracy versus convenience: a simulation-based comparison of two continuous imputation models for incomplete ordinal longitudinal clinical trials data. ***Statistics and Its Interface,*** Volume 2, Issue 4, 449-456.

29. Demirtas, H., Hedeker, D. & Kapur, K. (2009). A comparative study on most commonly used correlated binary data generation methods. ***Advances and Applications in Statistical Sciences***, Volume 1, Issue 1, 45-55.

30. Hedeker, D., **Demirtas, H.** & Mermelstein, R. J. (2009). A mixed ordinal location scale model for analysis of ecological momentary assessment (EMA) data. ***Statistics and Its Interface,*** Volume 2, Issue 4, 391-402.

31. Demirtas, H. (2010a). A distance-based rounding strategy for post-imputation ordinal data. ***Journal of Applied Statistics,*** Volume 37, Issue 3, 489-500.

32. Demirtas, H. (2010b). An application of multiple imputation under the two generalized parametric families. ***Journal of Data Science,*** Volume 8, Issue 3, 443-455.

33. Yucel, R. M. & **Demirtas, H.** (2010). Impact of non-normal random effects on inference by multiple imputation: A simulation assessment. ***Computational Statistics and Data Analysis,*** Volume 54, Issue 3, 790-801.

34. Demirtas, H. & Hedeker, D. (2011a). Generating multivariate continuous data via the notion of nearest neighbors. ***Journal of Applied Statistics,*** Volume 38, Issue 1, 47-55.

35. Demirtas, H. & Hedeker, D. (2011b). A practical way for computing approximate lower and upper correlation bounds. ***American Statistician,*** Volume 65, Issue 2, 104-109.

36. Harel, O. & **Demirtas, H.** (2011). Joint modeling of missing data due to non-participation and death in longitudinal aging studies. ***Statistics in Medicine,*** Volume 30, Issue 21, 2663-2665.

37. Helenowski, I. B., Vonesh, E. F., **Demirtas, H.**, Rademaker, A. W., Ananthanarayanan, V., Gann, P. H. & Jovanovic, B. D. (2011). Defining reproducibility statistics as a function of the spatial covariance structures in biomarker studies. ***International Journal of Biostatistics,*** Volume 7, Issue 1, 1-23.

38. Demirtas, H. & Doganay, B. (2012). Simultaneous generation of binary and normal data with specified marginal and association structures. ***Journal of Biopharmaceutical Statistics,*** Volume 22, Issue 2, 223-236.

39. Demirtas, H., Hedeker, D. & Mermelstein, R. J. (2012). Simulation of massive public health data by power polynomials. ***Statistics in Medicine***, Volume 31, Issue 27, 3337-3346.

40. Hedeker, D., Mermelstein, R. J. & **Demirtas, H.** (2012). Modeling between- and within-subject variance in ecological momentary assessment (EMA) data using mixed-effects location scale models. ***Statistics in Medicine***, Volume 31, Issue 27, 3328-3336.

41. Helenowski, I. B., **Demirtas, H.** & Doganay-Erdogan, B. (2012). On imputing binary data via pairwise associations and corresponding conditional probabilities. ***Turkish Clinics Journal of Biostatistics***, Volume 4, Issue 1, 1-9.

42. Leon, A. C., **Demirtas, H.,** Li, C. & Hedeker, D. (2012). Two propensity score-based strategies for a three-decade observational study: Investigating psychotropic medications and suicide risk. ***Statistics in Medicine***, Volume 31, Issue 27, 3255-3260.

43. Leon, A. C., Hedeker, D., Li, C. & **Demirtas, H.** (2012). Performance of a propensity score adjustment in longitudinal studies with covariate-dependent representation. ***Statistics in Medicine,*** Volume 31, Issue 20, 2262-2274.

44. Beaumont, J. L. & **Demirtas, H.** (2013). Multiple imputation by chained equations: An overview of conceptual and operational aspects and software. ***Turkish Clinics Journal of Biostatistics***, Volume 5, Issue 1, 29-36.

45. Helenowski, I. B. & **Demirtas, H.** (2013). A semi-parametric approach for imputing mixed data. ***Statistics and Its Interface***, Volume 6, Issue 3, 399-412.

46. Leon, A. C., **Demirtas, H.,** Li, C. & Hedeker, D. (2013). Subject-level matching for imbalance in clustered randomized trials with a small number of clusters. ***Pharmaceutical Statistics***, Volume 12, Issue 5, 268-274.

47. Demirtas, H. (2014a). Generating bivariate uniform data with a full range of correlations and connections to bivariate binary data. ***Communications in Statistics--Theory and Methods***, Volume 43, Issue 17, 3574-3579.

48. Demirtas, H. (2014b). Joint generation of binary and nonnormal continuous data. ***Journal of Biometrics and Biostatistics***, Volume 5, Issue 3, No 1000199, 1-9.

49. Demirtas, H., Amatya, A. & Doganay, B. (2014). BinNor: An R package for concurrent generation of binary and normal data. ***Communications in Statistics--Simulation and Computation,*** Volume 43, Issue 3, 569-579.

50. Helenowski, I. B. & **Demirtas, H.** (2014). Multiple imputation for continuous data via a semiparametric probability integral transformation. ***Journal of Biopharmaceutical Statistics***, Volume 24, Issue 2, 359-377.

51. Helenowski. I. B., **Demirtas, H.**, Khan, S., Eladoumikdachi, F. & Shidfar, A. (2014). Multiple imputation as a means to assess mammographic vs. ultrasound technology in determining breast cancer recurrence. ***Turkish Clinics Journal of Biostatistics***, Volume 6, Issue 2, 53-58.

52. Helenowski, I. B., **Demirtas, H.** & McGee, M. F. (2014). A semi-parametric approach to impute mixed continuous and categorical data. ***Health Services and Outcomes Research Methodology***, Volume 14, Issue 4, 183-193.

53. Amatya, A. & **Demirtas. H.** (2015a). MultiOrd: An R package for generating correlated ordinal data. ***Communications in Statistics—Simulation and Computation***, Volume 44, Issue 7, 1683-1691.

54. Amatya, A. & **Demirtas, H.** (2015b). Simultaneous generation of multivariate mixed data with Poisson and normal marginals. ***Journal of Statistical Computation and Simulation,*** Volume 85, Issue 15, 3129-3139.

55. Amatya, A. & **Demirtas, H.** (2015c). OrdNor: An R package for concurrent generation of ordinal and normal data. ***Journal of Statistical Software,*** Volume 68, Issue 15, 1-14.

56. Demirtas, H. & Yavuz, Y. (2015). Concurrent generation of ordinal and normal data. ***Journal of Biopharmaceutical Statistics***, Volume 25, Issue 4, 635-650.

57. Ercan, I. & **Demirtas, H.** (2015). Statistical errors in medical publications. ***Biometrics and Biostatistics International Journal***, Volume 2, Issue 1, 1-3.

58. Amatya, A. & **Demirtas, H.** (2016). Concurrent generation of multivariate mixed data with variables of dissimilar types. ***Journal of Statistical Computation and Simulation,*** Volume 86, Issue 18, 3595-3607.

59. Demirtas, H. (2016). A note on the relationship between the phi coefficient and the tetrachoric correlation under nonnormal underlying distributions. ***American Statistician,*** Volume 70, Issue 2, 143-148.

60. Demirtas, H., Ahmadian, R., Atis, S., Can, F. E. & Ercan, I. (2016). A nonnormal look at polychoric correlations: Modeling the change in correlations before and after discretization. ***Computational Statistics,*** Volume 31, Issue 4, 1385-1401.

61. Demirtas, H. & Hedeker, D. (2016). Computing the point-biserial correlation under any underlying continuous distribution. ***Communications in Statistics--Simulation and Computation,*** Volume 45, Issue 8, 2744-2751.

62. Hedeker, D., Mermelstein, R. J., **Demirtas, H**. & Berbaum, M.L. (2016). A mixed-effects location-scale model for ordinal questionnaire data. ***Health Services and Outcomes Research Methodology,*** Volume 16, Issue 3, 117-131.

63. Amatya, A. & **Demirtas, H.** (2017). PoisNor: An R package for generation of multivariate data with Poisson and normal marginals. ***Communications in Statistics--Simulation and Computation,*** Volume 46, Issue 3, 2241-2253.

64. Demirtas, H. (2017a). Concurrent generation of binary and nonnormal continuous data through fifth order power polynomials. ***Communications in Statistics--Simulation and Computation,*** Volume 46, Issue 1, 344-357.

65. Demirtas, H. (2017b). On accurate and precise generation of generalized Poisson variates. ***Communications in Statistics--Simulation and Computation,*** Volume 46, Issue 1, 489-499.

66. Demirtas, H. (2017c). A multiple imputation framework for massive multivariate data of different variable types: A Monte-Carlo technique (pp. 143-162). In ICSA Book Series in Statistics, John Dean Chen and Ding-Geng (Din) Chen (Eds): ***Monte-Carlo Simulation-Based Statistical Modeling***. Singapore: Springer.

67. Demirtas, H. & Vardar-Acar, C. (2017). Anatomy of correlational magnitude transformations in latency and discretization contexts in Monte-Carlo studies (pp. 59-84). In ICSA Book Series in Statistics, John Dean Chen and Ding-Geng (Din) Chen (Eds): ***Monte-Carlo Simulation-Based Statistical Modeling.*** Singapore: Springer.

68. Demirtas, H., Allozi, R., Hu, Y., Inan, G. & Ozbek, L. (2017). Joint generation of binary, ordinal, count, and normal data with specified marginal and association structures in Monte-Carlo simulations (pp. 3-15). In ICSA Book Series in Statistics, John Dean Chen and Ding-Geng (Din) Chen (Eds): ***Monte-Carlo Simulation-Based Statistical Modeling.*** Singapore: Springer.

69. Hedeker, D., du Toit, S., **Demirtas, H.** & Gibbons, R. D. (2018). A note on the marginalization of regression parameters from generalized linear mixed models. ***Biometrics***, Volume 74, Issue 1, 354-361.

70. Demirtas, H. (2019). Inducing any feasible level of correlation to bivariate data with any marginals. ***American Statistician,*** Volume 73, Issue 3, 273-277.

71. Demirtas, H., Vardar-Acar, C., Gao, R., Aydemir, I. & Yabaci, A. (2020). An improved textbook rule on the mean-median inequality for discrete data. ***Turkish Clinics Journal of Biostatistics,*** Volume 12, Issue 2, 158-167.

72. Goette, H., Xiong, J., Kirchner, M., **Demirtas, H.** & Kieser, M. (2020). Optimal decision making in oncology development programs based on probability of success for phase III utilizing phase II/III data on response and overall survival. ***Pharmaceutical Statistics***, Volume 19, Issue 6, 861-881.

73. Li, H**., Demirtas, H.** & Chen, R. (2020). RNGforGPD: An R package for generation of univariate and multivariate generalized Poisson data. ***The R Journal,*** Volume 12, Issue 2, 120-133.

74. Mei, X.**,** Wang, X., Kaya, M. O. & **Demirtas, H**. (2020). Random number generation based on characteristics functions. ***Turkish Clinics Journal of Biostatistics***, Volume 12, Issue 3, 242-251.

75. Ozbek, L. & **Demirtas, H**. (2021). A study on the estimation of COVID-19 daily cases and reproduction number using adaptive Kalman Filter for USA, Brazil, Germany, India, Russia, Italy, Spain, United Kingdom, France, and Turkey. ***Turkish Clinics Journal of Biostatistics***, Volume 13, Issue 1, 91-102.

76. Demirtas, H. & Gao, R. (2022). Mixed data generation packages and related computational tools in R. ***Communications in Statistics--Simulation and Computation,*** Volume 51, Issue 8, 4520-4563.

77. Gao, R. & **Demirtas, H.** (2023). CorrToolBox: an R package for modeling correlational transformations in discretization contexts. ***Communications in Statistics--Simulation and Computation,*** in press, DOI: 10.1080/03610918.2022.2087876

PEER-REVIEWED COLLABORATIVE & INTERDISCIPLINARY PUBLICATIONS

78. Batcioglu, K., Ozturk, I. C., Atalay, S., Dogan, D., Bayri, N. & **Demirtas, H.** (2002). Investigation of time dependent magnetic field effect on superoxide dismutase and catalase activity: An in-vitro study. ***Journal of Biological Physics and Chemistry***, Volume 2, 108-112.

79. Gulek, J. C. & **Demirtas, H**. (2005). Learning with technology: The impact of laptop use on student achievement. ***Journal of Learning, Technology and Assessment***, Volume 3, Number 2, 1-39.

80. Dorevitch, S., **Demirtas, H.**, Persky, V. W., Erdal, S., Conroy, L., Schoonover, T. & Scheff, P. A. (2006). Demolition of high-rise public housing increases particulate matter air pollution in communities of high-risk asthmatics. ***Journal of the Air and Waste Management Association,*** Volume 56, 1022-1032.

81. Hill, P. D., Aldag, J. C., **Demirtas, H**., Zinaman, M. & Chatterton, R. T. (2006). Mood states and milk output in lactating mothers of preterm and term infants. ***Journal of Human Lactation*****,** Volume 22, Issue 3, 305-314.

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102. Abderhalden, L., Weaver, F., Bethel, M., **Demirtas, H.**, Burns, S., Svircev, J., Hoenig, H., Lyles, K., Miskevics, S. & Carbone, L. D. (2017a). Dual-energy X-ray absorptiometry and fracture prediction in patients with spinal cord injuries and disorders. ***Osteoporosis International***, Volume 28, Issue 3, 925-934.

103. Abderhalden, L., Weaver, F., Bethel, M., **Demirtas, H.**, Burns, S., Svircev, J., Hoenig, H., Lyles, K., Miskevics, S. & Carbone, L. D. (2017b). Response to Sabour: Dual-energy X-ray absorptiometry and fracture prediction in patients with spinal cord injuries and disorders. ***Osteoporosis International***, Volume 28, Issue 7, 2261-2262.

104. Hall, M., Chanbra, S., Shakoor, N., Leurgans, S. E**., Demirtas, H.** & Foucher, K. C. (2019). Hip joint moments in symptomatic vs. asymptomatic people with mild radiographic hip osteoarthritis. ***Journal of Biomechanics***, Volume 96, Number 109307, 1-8.

105. Weine, S. M., Arenliu, A., Gormez, V., Langenecker, S. & **Demirtas, H.** (2021). Conducting research on building psychosocial support for Syrian refugee families in a humanitarian emergency. ***Conflict and Health***, Volume 15, Number 31, 1-7.

106. Ozbek, L. & **Demirtas, H.** (2021). Estimation of daily cases of COVID-19 and reproduction number in USA, Germany, India, Russia, Italy, Spain, France, United Kingdom, and Brazil using discrete time Gompertz model and adaptive Kalman Filter. ***Eskisehir Technical University, Journal of Science and Technology A- Applied Sciences and Engineering***, Volume 22, Number 3, 239-259.

107. Demirtas, H., Cosar, K. & Altuntas, M. (2022). Concurrent generation of binary, ordinal, and count data with specified marginal and associational quantities in pharmaceutical sciences. ***Anatolian Journal of Pharmaceutical Sciences*****,** Volume 1, Issue 1, 7-32.

108. Dorevitch, S., Geiger, S. D, Kelly, W, Jacobs, D. E. & **Demirtas, H.** (2023). Repeated home drinking water sampling to improve detection of particulate lead spikes: a simulation study**.** ***Journal of Exposure Science and Environmental Epidemiology*****.** Open access at https://www.nature.com/articles/s41370-023-00534-0

BOOK REVIEWS, CONFERENCE PROCEEDINGS AND OTHER PUBLICATIONS
(technical reports are excluded)

109. Demirtas, H. & Schafer, J. L. (2002). Performance of random-coefficient pattern-mixture models for nonrandom attrition. ***Biopharmaceutical Section of Joint Statistical Meeting Proceedings 2002****,* 730-735.

110. Demirtas, H. (2004). Review of the book "Medical Statistics from Scratch" by Bowers, D. ***Statistical Methods in Medical Research****,* Volume 13, Number 3, 242-243.

111. Demirtas, H. (2005). Review of the book "All of Statistics" by Wasserman, L. ***Statistical Methods in Medical Research,*** Volume 14, Number 2, 193-193.

112. Demirtas, H. (2005). Review of the book "Applied Longitudinal Analysis" by Fitzmaurice, G. M., Laird, N. M. & Ware, J. H. ***Statistical Methods in Medical Research****,* Volume 14, Number 3, 321-322.

113. Demirtas, H. (2005). An imputation strategy for correlated binary responses. ***Statistical Computing Section of Joint Statistical Meeting Proceedings 2005****,* 2079-2080.

114. Gulek, J. C. & **Demirtas, H**. (2005). Learning with technology: The impact of laptop use on student achievement. ***Journal of Research and Information***, Volume 23, Number 4, 4-20. (Re-print of Journal of Learning, Technology and Assessment article)

115. Demirtas, H. (2008). Review of the book "Longitudinal Data Analysis for Biomedical and Behavioral Sciences" by Hedeker, D. & Gibbons, R.D. ***Statistical Methods in Medical Research,*** Volume 17, Number 2*,* 342-343.

116. Demirtas, H. (2011). Review of the book "Statistical Simulation—Power Method Polynomials and Other Transformations" by Headrick, T. C. ***Journal of Statistical Software,*** Volume 43, Book review 2, 1-3.

117. Hedeker, D.**, Demirtas, H.** & Gibbons, R. D. (2012). Andrew C. Leon, Ph.D. (1951-2012). ***Statistics in Medicine,*** Volume 31, Issue 27, 3253-3254.

118. Demirtas, H. (2017). Review of the book "Bayesian Computation with R" by Albert, J. C. ***Journal of Statistical Software,*** Volume 79, Book review 1, 1-3.

119. Demirtas, H. & Nordgren, R. (2017). Review of the book "Introduction to Scientific Programming and Simulation using R (Second Edition)" by Jones, O., Maillardet, R. & Robinson, A. ***Journal of Statistical Software,*** Volume 78, Book review 4, 1-4.

120. Demirtas, H. (2018). Review of the book "Handbook of Fitting Statistical Distributions with R" by Karian, Z. A. & Dudewicz, E. J. ***Journal of Statistical Software,*** Volume 86, Book review 2, 1-4.

121. Demirtas, H. (2018). Review of the book "Flexible Imputation of Missing Data" by van Buuren, S. ***Journal of Statistical Software,*** Volume 85, Book review 4, 1-5.

122. Demirtas, H. (2018). Review of the book "Analyzing Longitudinal Clinical Trials Data" by Mallinckrodt, C. & Lipkovich, I. ***Biometrical Journal,*** Volume 60, Issue 5, 1022-1023.

123. Coskun, B., Vardar-Acar, C. & **Demirtas, H.** (2020). A study on the discretization of fractional Brownian motion. ***AIP Conference Proceedings,*** Volume 2293, Number 1, 180013/1-4.

SOFTWARE DEVELOPMENT (R PACKAGES)

123. BinNor: *Simultaneous Generation of Multivariate Binary and Normal Variates* (with Anup Amatya and Ran Gao)

https://cran.r-project.org/web/packages/BinNor/index.html

124. MultiOrd*: Generation of Multivariate Ordinal Variates* (with Anup Amatya and Ran Gao)

https://cran.r-project.org/web/packages/MultiOrd/index.html

125. OrdNor*: Concurrent Generation of Ordinal and Normal Data with Given Correlation Matrix and Marginal Distributions* (with Anup Amatya and Ran Gao)

https://cran.r-project.org/web/packages/OrdNor/index.html

126. PoisNor*: Simultaneous Generation of Multivariate Data with Poisson and Normal Marginals* (with Anup Amatya and Ran Gao)

https://cran.r-project.org/web/packages/PoisNor/index.html

127. BinNonNor*: Data Generation with Binary and Continuous Non-Normal Components* (with Gul Inan and Ran Gao)

https://cran.r-project.org/web/packages/BinNonNor/index.html

128. PoisBinOrd*:* D*ata Generation with Poisson, Binary and Ordinal Components* (with Gul Inan and Ran Gao)

https://cran.r-project.org/web/packages/PoisBinOrd/index.html

129. PoisBinNonNor*: Data Generation with Poisson, Binary and Continuous Components* ***(***with Gul Inan and Ran Gao***)***

https://cran.r-project.org/web/packages/PoisBinNonNor/index.html

130. BinOrdNonNor*: Concurrent Generation of Binary, Ordinal and Continuous Data* ***(***with Yue Wang, Rawan Allozi, and Ran Gao)

https://cran.r-project.org/web/packages/BinOrdNonNor/index.html

131. PoisNonNor*: Simultaneous Generation of Count and Continuous Data* (with Yaru Shi, Rawan Allozi, and Ran Gao)

https://cran.r-project.org/web/packages/PoisNonNor/index.html

132. PoisBinOrdNor*: Data Generation with Poisson, Binary, Ordinal and Normal Components* (with Yiran Hu, Rawan Allozi, and Ran Gao)

https://cran.rproject.org/web/packages/PoisBinOrdNor/index.html

133. PoisBinOrdNonNor*: Generation of Up to Four Different Types of Variables (*with Rachel Nordgren, Rawan Allozi, and Ran Gao)

https://cran.rproject.org/web/packages/PoisBinOrdNonNor/index.html

134. CorrToolBox*: Modeling Correlational Magnitude Transformations in Discretization Contexts* (with Rawan Allozi and Ran Gao)

https://cran.rproject.org/web/packages/CorrToolBox/index.html

135. BivUnifBin*: Generation of Bivariate Uniform Data and Its Relation to Bivariate Binary Data* (with Rawan Allozi and Ran Gao)

https://cran.rproject.org/web/packages/BivUnifBin/index.html

136. UnivRNG*: Univariate Pseudo-Random Number Generation* (with Rawan Allozi and Ran Gao)

https://cran.rproject.org/web/packages/UnivRNG/index.html

137. MultiRNG*: Multivariate Pseudo-Random Number Generation* (with Rawan Allozi and Ran Gao)

https://cran.rproject.org/web/packages/MultiRNG/index.html

138. RNGforGPD*: Random Number Generation for Generalized Poisson Distribution* (with Hesen Li, Ruizhe Chen, Hai Nguyen, Yu-che Chung, and Ran Gao*)*

https://cran.rproject.org/web/packages/RNGforGPD/index.html

139. MultiVarMI*: Multiple Imputation for Multivariate Data* (with Rawan Allozi)

https://cran.rproject.org/web/packages/MultiVarMI/index.html

PRESENTATIONS AT INTERNATIONAL CONFERENCES

1. Multiple imputation under a multivariate Bayesian pattern-mixture model. Joint Statistical Meetings, Atlanta, GA, August 2001.

2. Random coefficient pattern-mixture models for nonrandom attrition. Joint Statistical Meetings, New York City, NY, August 2002.

3. On the performance of random-coefficient pattern-mixture models for non-MAR dropout. Annual Meeting of the Society for Prevention Research, Seattle, WA, June 2002.

4. Gaussianization-based quasi-imputation and expansion strategies for correlated binary data. Joint Statistical Meetings, Minneapolis, MN, August 2005.

5. Imputation by Gaussianization for correlated binary data. International Biometric Society-Eastern North American Region Annual Conference, Tampa, FL, March 2006.

6. An imputation strategy for incomplete longitudinal ordinal data (with Donald Hedeker). 11th Biennial CDC&ATSDR Symposium on Statistical Methods, Atlanta, GA, April 2007.

7. Multiple imputation under multivariate Fleishman polynomials. 11th Biennial CDC&ATSDR Symposium on Statistical Methods, Atlanta, GA, April 2007.

8. Simulation of massive public health data by power polynomials (with Donald Hedeker and Robin J. Mermelstein). 13th Biennial CDC&ATSDR Symposium on Statistical Methods, Atlanta, GA, May 2011.

9. A novel Bayesian multiple imputation framework for massive multivariate data with mixed types of marginals. Joint Statistical Meetings, Chicago, IL, August 2016.

10. Hybrid data generation (keynote speaker). 5th International Researchers, Statisticians and Young Statisticians Congress, Kusadasi, Turkey, October 2019.

11. Multiple imputation for real-time data-capture studies (keynote speaker). 6th International Researchers, Statisticians and Young Statisticians Congress, Antalya, Turkey, November 2022.

INVITED TALKS, LECTURES, WORKSHOPS

1. Model-based approaches for longitudinal data. Bilkent University, Department of Industial Engineering, Ankara, Turkey, December 2000.

2. Data augmentation strategies for arbitrarily missing repeated-measures data. Middle East Technical University, Department of Statistics, Ankara, Turkey, December 2000.

3. Pattern-mixture models under multivariate normal distribution assumption with unstructured covariances. Pennsylvania State University Methodology Center, University Park, PA, March 2001.

4. Incorporating the model uncertainty via multiple imputation. Pennsylvania State University Methodology Center, University Park, PA, April 2002.

5. Semiparametric and parametric approaches for missing data. Bristol Meyers, Hartford, CT, October 2002.

6. A new class of Bayesian mixture models. University of South Florida, Department of Epidemiology and Biostatistics, Tampa, FL, January 2003.

7. A new class of Bayesian mixture models. Pennsylvania State University Medical School, Hershey, PA, March 2003.

8. A new class of Bayesian mixture models. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, May 2003.

9. In imputers we trust, all others bring complete data. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, November 2003.

10. Another look at pattern-mixture models. University of Kentucky, Department of Statistics, Lexington, KY, December 2004.

11. Bayesianly smoothed pattern-mixture models for non-ignorable drop-out. University of Illinois at Chicago, Department of Mathematics, Statistics and Computer Science, Chicago, IL, February 2005.

12. Overview of medical statistics. Inonu University, College of Medicine, Malatya, Turkey, June 2005.

13. Gaussianization-based quasi-imputation and expansion strategies for correlated binary data. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, September 2005.

14. Bayesianly smoothed pattern-mixture models for non-ignorable drop-out. Northwestern University, Department of Preventive Medicine, Chicago, IL, February 2006.

15. Multiple imputation under Bayesianly smoothed random-coefficient hierarchical pattern-mixture models for nonignorably missing longitudinal data. Northwestern University, Department of Statistics, Chicago, IL, May 2006.

16. Fundamentals of Bayesian data analysis and inference. University of Illinois at Chicago, Quantitative Biomedical Sciences Program, Chicago, IL, October 2006.

17. Real life and notorious statistical execution and interpretation mistakes. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, October 2006.

18. Fundamental concepts in biostatistics and common statistical mistakes made by medical researchers. 33rd National Hematology Congress, Ankara, Turkey, October 2007.

19. Ground-breaking ideas in random number generation: The never-before-told story of generality and simplicity. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, September 2011.

20. Ground-breaking ideas in random number generation: A simulation-driven quest for pseudo-truth and alternate reality. TOBB University of Economics and Technology, College of Engineering, Ankara, Turkey, June 2011.

21. Ground-breaking ideas in random number generation: An unusual combination of generality and simplicity. Northwestern University, Department of Preventive Medicine, Chicago, IL, November 2011.

22. Ground-breaking ideas in random number generation: A simulation-driven quest for pseudo-truth and alternate reality, Middle East Technical University, Department of Statistics, Ankara, Turkey, February 2012.

23. Ground-breaking ideas in random number generation: A simulation-driven quest for pseudo-truth and alternate reality. Bilkent University, Department of Industrial Engineering, Ankara, Turkey, April 2012.

24. Ground-breaking ideas in random number generation: A simulation-driven quest for pseudo-truth and alternate reality. Ankara University, Department of Biostatistics, Ankara, Turkey, April 2012.

25. Concurrent generation of ordinal and normal data. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, September 2013.

26. Subject-level matching for imbalance in clustered randomized trials with a small number of clusters. Rush University Medical Center, Department of Preventive Medicine, Chicago, IL, December 2013.

27. Concurrent generation of ordinal and normal data. Northwestern University Department of Statistics, Evanston, IL, February 2014.

28. Statistical reporting guidelines and common statistical errors in biobehavioral and medical research. Tajik Medical Institute, Dushanbe, Tajikistan, April 2015.

29. Workshop on longitudinal data analysis. Tajik Medical Institute, Dushanbe, Tajikistan, April 2015.

30. Statistical reporting guidelines and common statistical errors in biobehavioral and medical research. University of Prishtine, College of Medicine, Prishtine, Kosovo, June 2015.

31. Workshop on longitudinal data analysis. University of Prishtine, College of Medicine, Prishtine, Kosovo, June 2015.

32. Anatomy of correlational magnitude transformations in latency and discretization contexts. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, April 2016.

33. Anatomy of correlational magnitude transformations in latency and discretization contexts. Northwestern University, Department of Preventive Medicine, Chicago, IL, March 2018.

34. What does correlation really mean in today's world? University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, February 2019.

35. Inducing any feasible level of correlation to bivariate data with any marginals. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, September 2019.

36. An improved textbook rule on the mean-median inequality for discrete data. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, September 2020.

37. Multivariate data generation via a sorting approach. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, September 2021.

38. Multivariate data generation via a sorting approach. Loyola University, Department of Mathematics and Statistics, Chicago, IL, November 2021.

39. Multiple imputation for real-time data-capture studies. University of Illinois at Chicago, Division of Epidemiology and Biostatistics, Chicago, IL, February 2023.

AWARDS and HONORS

Recipient of University of Illinois Faculty Support Program Scholarship

PROFESSIONAL MEMBERSHIPS

American Statistical Association, Institute of Mathematical Statistics, Center for Health Statistics—University of Chicago.

REFERENCES

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