

## Lee H. Dicker

Department of Statistics and Biostatistics  
Rutgers University  
477 Hill Center  
110 Frelinghuysen Road  
Piscataway, NJ 08854

Voice: 848-445-7668  
Fax: 848-445-3428  
email: ldicker@stat.rutgers.edu  
Web: www.stat.rutgers.edu/~ldicker

### Education

- 2010 Ph.D., Biostatistics, Harvard University. Cambridge, MA.  
Dissertation: *Regularized Regression Methods for Variable Selection and Estimation*.  
Advisor: Professor Xihong Lin.
- 2006 A.M., Statistics, University of Pennsylvania. Philadelphia, PA.  
Master's thesis: *Random Partitions in Population Genetics and Bayesian Nonparametric Statistics*.
- 2006 M.Phil., Mathematics, University of Pennsylvania. Philadelphia, PA.  
Master's thesis: *Coloring a  $d \geq 3$ -Dimensional Lattice with Two Independent Random Walks*.
- 2003 B.S., Mathematics, McGill University. Montréal, QC, Canada.  
First-class honours.

### Experience

- 2010-Present Assistant Professor, Department of Statistics and Biostatistics, Rutgers University.
- 2012-Present Visiting Adjunct Professor, College of Nursing, Rutgers University.

### Funding

1. National Science Foundation Grant DMS-1454817 (2015-2020) *CAREER: Maximum likelihood and nonparametric empirical Bayes methods in high dimensions*, \$400,000. **Principal investigator.**
2. National Science Foundation Grant DMS-1208785 (2012-2015) *Dense and Sparse Methods in High-Dimensional Data Analysis*, \$159,995. **Principal investigator.**
3. Rutgers Faculty Research Grant (2012) *Statistical Methods for Continuous Blood Glucose Monitoring*, \$16,000. **Principal investigator.**

### Academic honors

1. NSF CAREER Award, 2015-2020.
2. Robert B. Reed Prize for Excellence in Biostatistical Science, Harvard University, January 2007.

### Publications

1. Dicker, L.H. and Erdogdu, M.A. (2016+) Flexible results for quadratic forms with applications to variance components estimation. *Annals of Statistics*, accepted.

2. Dicker, L.H. and Erdogdu, M.A. (2016+) Maximum likelihood for variance estimation in high-dimensional linear models. *Artificial Intelligence and Statistics (AISTATS 2016)*, accepted.
3. Dicker, L.H. and Zhao, S.D. (2016) High-dimensional classification via nonparametric empirical Bayes and maximum likelihood. *Biometrika*, advance online publication doi: 10.1093/biomet/asv067.
4. Dicker, L.H. (2016) Ridge regression and asymptotic minimax estimation over spheres of growing dimension. *Bernoulli*, **22**, 1–37.
5. Sofer, T., Dicker, L.H., and Lin, X. (2014) Variable selection for high-dimensional multivariate outcomes. *Statistica Sinica*, **24**, 1633–1654.
6. Dicker, L.H. (2014) Variance estimation in high-dimensional linear models. *Biometrika*, **101**, 269–284.
7. Dicker, L.H. (2014) Sparsity and the truncated  $\ell^2$ -norm. *Artificial Intelligence and Statistics (AISTATS 2014)*, **17**, 159–166.
8. Li, Y., Dicker, L.H., and Zhao, S.D. (2014) The Dantzig selector for censored linear regression models. *Statistica Sinica*, **24**, 251–268.
9. Dicker, L.H. and Foster, D.P. (2013) One-shot learning and big data with  $n = 2$ . *Neural Information Processing Systems (NIPS 2013)*, **26**, 270–278.
10. Dicker, L.H., Sun, T., Zhang, C.-H., Keenan, D.B., and Shepp, L.A. (2013) Continuous blood glucose monitoring: A Bayes-hidden Markov approach. *Statistica Sinica*, **23**, 1595–1627.
11. Dicker, L.H. (2013) Optimal equivariant prediction for high-dimensional linear models with arbitrary predictor covariance. *Electronic Journal of Statistics*, **7**, 1806–1834.
12. Dicker, L.H. and Lin, X. (2013) Parallelism, uniqueness, and large sample asymptotics for the Dantzig selector. *Canadian Journal of Statistics*, **41**, 23–35.
13. Dicker, L.H., Huang, B., and Lin, X. (2013) Variable selection and estimation with the seamless- $L_0$  penalty. *Statistica Sinica*, **23**, 929–962.
14. Fu, S., Yang, L., Li, P., Hofmann, O., Dicker, L.H., Hide, W., Lin, X., Watkins, S.M., Ivanov, A.R., and Hotamisligil, G.S. (2011) Aberrant lipid metabolism disrupts calcium homeostasis causing liver endoplasmic reticulum stress in obesity. *Nature*, **473**, 528–531.
15. Clancy, R.R., Dicker, L.H., Cho, C., Cook, N., Nicolson, S.C., Wernovsky, G., Spray, T.L., and Gaynor, J.W. (2011) Agreement between long-term neonatal background classification by conventional and amplitude-integrated EEG. *Journal of Clinical Neurophysiology*, **28**, 1-9.
16. Dicker, L.H., Lin, X., and Ivanov, A.R. (2010) Increased power for the analysis of label-free LC-MS/MS data by combining spectral counts and peptide peak attributes. *Molecular and Cellular Proteomics*, **9**, 2704–2718.
17. Wallach, H.M., Jensen, S.T., Dicker, L.H., and Heller, K. (2010) An alternative prior process for nonparametric Bayesian clustering. *Artificial Intelligence and Statistics (AISTATS 2010)*, **13**, 892–899.
18. Lin, X. and Dicker, L.H. (2009). Discussion of "Parametric versus nonparametrics: two alternative methodologies." *Journal of Nonparametric Statistics*, **21**, 415–417.

## Papers under revision or review

1. Dicker, L.H., Foster, D.P., and Hsu, D. Kernel methods and regularization techniques for nonparametric regression: Minimax optimality and adaptation.
2. Feng, L. and Dicker, L.H. Nonparametric maximum likelihood for mixture models: A convex optimization approach to fitting arbitrary multivariate mixing distributions.

## Peer reviewed conference abstracts

1. Dicker, L.H., Sun., T., Zhang, C.-H., Keenan, D.B., and Shepp., L.A. (2011) Hidden Markov models for improving accuracy in real-time glucose monitoring. *Diabetes Technology Society, 2011 Diabetes Technology Meeting*. San Francisco, CA.

## Invited talks

1. Stevens Institute of Technology, Financial Engineering Seminar (2015).
2. University of Pennsylvania, Statistics Department Seminar (2015).
3. University of Illinois at Urbana-Champaign, Department of Statistics Seminar (2015).
4. Applied Topology and High-Dimensional Data Analysis Workshop, British Columbia, Canada (2015).
5. George Mason University, Department of Statistics Seminar (2015).
6. International Indian Statistical Association Conference, Riverside, CA (2014).
7. The 3rd Institute of Mathematical Statistics Asia Pacific Rim Meeting, Taipei, Taiwan (2014).
8. International Workshop on Applied Probability, Antalya, Turkey (2014).
9. BIRS Workshop on Statistical and Computational Theory and Methodology for Big Data Analysis, Banff, Canada (2014).
10. Rutgers University, Signal and Information Processing Seminar (2013).
11. DIMACS Workshop on Analysis of Information from Diverse Sources, Rutgers University, NJ (2013).
12. New Jersey Institute of Technology, Statistics Seminar (2012).
13. New York University, Stern School of Business, IOMS-Statistics Seminar Series (2012).
14. CRM Workshop on Perspectives on High-Dimensional Data Analysis II, Montréal, Canada (2012).
15. Georgia Tech, School of Industrial and Systems Engineering, Statistics Seminar (2012).
16. Lehigh University, Mathematics Department Colloquium (2011).
17. The 3rd IMS-China International Conference on Statistics and Probability, Xi'An, China (2011).
18. Southern Regional Council on Statistics Summer Research Conference, McCormick, SC (2011).
19. International Chinese Statistical Association: The 20th Applied Statistics Symposium, New York, NY (2011).
20. The 25th New England Statistics Symposium, Storrs, CT (2011).
21. DIMACS Mixer, Hoboken, NJ (2010).
22. Rutgers University, BioMaPS Seminar (2010).
23. University of Vienna, Department of Statistics, Statistics Seminar (2010).

24. Rutgers University, Department of Statistics and Biostatistics, Statistics Seminar (2010).
25. ETH Zürich, Seminar for Statistics (2010).
26. Joint Statistical Meetings, Washington, DC (2009).
27. Harvard School of Public Health: Quantitative Issues in Cancer Research Working Seminar, Department of Biostatistics (2008).
28. Radcliffe Institute for Advanced Study, Exploratory Seminar of “High-Dimensional Data Analysis: Perspectives from the Interface of Statistics, Biosciences, and Information Sciences” (2008).
29. Harvard School of Public Health, Department of Biostatistics, Environmental Statistics Large Group Meeting (2008).

## Student supervision

### *PhD students supervised*

1. Long Feng. Rutgers University, Department of Statistics and Biostatistics (co-supervised with Prof. Cun-Hui Zhang). Expected completion date: 2017.

### *Doctoral dissertation committees*

1. Xialu Liu. Rutgers University, Department of Statistics and Biostatistics. *New Models and Methods for Time Series Analysis in Big Data Era* (2015).
2. Yayan Zhang. Rutgers University, Department of Statistics and Biostatistics. *Data Normalization and Clustering for Big and Small Data and an Application to Clinical Trials* (2015).
3. Lan Yi. Rutgers University, Department of Statistics and Biostatistics. *Biomarker Discovery for Microarray Data by Enriched Methods, Stochastic Approximation and Mixed Effect Models* (2014).
4. Ning Tang. Rutgers University, Department of Statistics and Biostatistics. *Robust Gene Set Analysis and Robust Gene Expression* (2014).
5. Kezhen Liu. Rutgers University, Department of Statistics and Biostatistics. *Statistical Applications to Cardiovascular Disease Research* (2014).
6. Suzanne M. Keep. Rutgers University, College of Nursing. *Factors Affecting Commitment to a Plan of Physical Activity Among Low-Income Hispanic Mothers and their Daughters* (2013).
7. Xueying Chen. Rutgers University, Department of Statistics and Biostatistics. *Analysis of Big Data by Split-and-Conquer and Penalized Regressions: New Methods and Theory* (2013).
8. Tingni Sun. Rutgers University, Department of Statistics and Biostatistics. *Statistical Methods for High-Dimensional Data Analysis and Continuous Glucose Monitoring* (2012).
9. Shuhao Chen. Rutgers University, Department of Statistics and Biostatistics. *On Order Identification of Time Series Models and its Applications* (2011).

## Service

### *To Rutgers University*

- 2015 Organizing committee for Rutgers Workshop on Innovations in Statistics and Data Analysis (co-chair).
- 2014-2015 Department of Statistics and Biostatistics seminar committee (chair; seminar coordinator).
- 2014 Organizing committee for 2014 Rutgers Statistics Symposium (co-chair).
- 2010-Present Committees: Department website, Financial statistics and risk management, PhD exam, Student outreach, Graduate curriculum, Undergraduate studies, Social.
- 2010-2011 Developed website for newly launched Financial Statistics and Risk Management program.
- 2010 Student outreach presentation at The College of New Jersey (Ewing, NJ).

### *Editorial activities*

- 2014-2015 Computational Statistics and Data Analysis, Associate Editor.

### *Other activities*

- 2015 Organized topic contributed session at JSM 2015: “Empirical Bayes Methods for Modern Data Analysis: Theoretical, Computational, and Practical Aspects.”

### *Journal and conference refereeing*

AISTATS 2016, Annals of Statistics, Biometrics, Biometrika, Canadian Journal of Statistics, COLT 2015, Communications in Statistics, Computational Statistics and Data Analysis, Computer Methods and Programs in Biomedicine, Epidemiologic Methods, ICML 2015, Journal of the American Statistical Association, Journal of Applied Econometrics, Journal of Econometrics, Journal of Machine Learning Research, Journal of Multivariate Analysis, Journal of the Royal Statistical Society: Series B (Methodological), Journal of Statistical Planning and Inference, NIPS 2015, Sankhya B, Statistica Sinica, Statistical Methodology, Statistics in Biosciences.