

Abhirup Datta

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Academic Appointments

2016–Present Assistant Professor, *Department of Biostatistics*, Johns Hopkins Bloomberg School of Public Health.

Education

2012–2016 Ph.D., Biostatistics, *University of Minnesota*, Minneapolis.
Advisers: [Dr. Sudipto Banerjee](#) and [Dr. Hui Zou](#)

2008–2010 M.Stat., *Indian Statistical Institute*, Kolkata, India.
Specialized in Math-Stat-Probability

2005–2008 B.Stat., *Indian Statistical Institute*, Kolkata, India.

Research Interests

Spatial and spatio-temporal data, High dimensional data, Bayesian statistics, Small Area Estimation, Applications to environmental and ecological data

Papers:

* indicates equal contributions

Datta, A., Banerjee, S., Finley, A.O. and Gelfand, A.E. (2016) *Hierarchical Nearest Neighbor Gaussian Process models for Large Geostatistical Datasets*, Journal of the American Statistical Association, vol. 111, no. 514, pp. 800-812, 2016.

Datta, A., Banerjee, S., Finley, A.O., Hamm, N.A.S. and Schaap, M. (2016) *Non-separable Dynamic Nearest Neighbor Gaussian Process Models for Large Spatio-temporal Data with Application to Particulate Matter Analysis*, Annals of Applied Statistics, vol. 10, no. 3, pp. 128-1316, 2016.

Datta, A., Banerjee, S., Finley, A.O. and Gelfand, A.E. (2016) *On nearest-neighbor Gaussian process models for massive spatial data*, Wiley Interdisciplinary Reviews: Computational Statistics, vol. 8, no. 5, pp. 162-171, 2016.

Datta, A. and Zou, H. 2016 *CoCoLasso for High-dimensional Error-in-variables Regression* Annals of Statistics (Accepted) [\[ArXiv\]](#)

Datta, A., Zou, H. and Banerjee, S. (Submitted) *Bayesian Inference for High-dimensional Changing Linear Regression with Application to Minnesota House Price Index Data* [\[ArXiv\]](#)

Butler, E.E.*, **Datta, A.*** et al. (Submitted) *Mapping Global Leaf Trait Distributions*

Flores-Moreno, H., Fazayeli, F., Banerjee, A., **Datta, A.**, Kattge, J., Butler, E., Atkin, O., Wythers, K., Chen, M., Anand, M., Bahn, M., Burrascano, S., Byun, C., Cornelissen, J., Craine, J., Gonzalez-Melo, A., Hattingh, W., Jansen, S., Kraft, N., Kramer, K., Laughlin, D., Minden, V., Niinemets, U., Onipchenko, V., Penuelas, J., Soudzilovskaia, N. and Reich, P. (Submitted) *Robustness of trait connections between multiple plant organs across environmental gradients and growth forms*

Finley, A.O., **Datta, A.**, Cook, B.C., Morton, D.C., Andersen, H.E. and Banerjee, S. (Submitted) *Applying Nearest Neighbor Gaussian Processes to Massive Spatial Data Sets: Forest Canopy Height Prediction Across Tanana Valley Alaska* [\[ArXiv\]](#)

Datta, A., Banerjee, S. and Hodges, J. S. (Submitted) *Spatial disease mapping using Directed Acyclic Graph Auto-Regressive (DAGAR) models* [\[ArXiv\]](#)

Awards

Fellowships and Grants

- 2015 [Inter-disciplinary Doctoral Fellowship 2015-16](#), *University of Minnesota, Graduate School*, Minneapolis, MN.
- 2015 Professional Development Grant, *School of Public Health, University of Minnesota*, Minneapolis, MN.
- 2013 Dean's Ph.D. Scholarship Award, *School of Public Health, University of Minnesota*, Minneapolis, MN.

Teaching Award

- 2014 ASA Outstanding Teaching Assistant Award, *Division of Biostatistics, University of Minnesota*, Minneapolis, MN.

Paper and Conference Travel Awards

- 2017 Outstanding Statistical Application Award, *American Statistical Association*.
- 2016 ENAR Distinguished Student Paper Award, *International Biometric Society*, Austin, TX.
- 2015 G70 Conference, *Duke University*, Durham, NC.
- 2014 JSM Student Paper Award, *American Statistical Association, Section on Bayesian Statistical Science*, Boston, MA.
Also selected for best paper award in Statistics and the Environment Section
- 2014 ISBA World Meeting, *International Society for Bayesian Analysis*, Cancun, Mexico.
- 2014 Conference on Non-parametric Statistics for Big Data and Celebration to Honor Professor Grace Wahba, *University of Wisconsin*, Madison, WI.
- 2014 Pan-American Advanced Study Institute on Spatio-Temporal Statistics, *Travel grant from National Science Foundation*, Buzios, Brazil.

Other awards

- 2016 Delta Omega Honorary Society Student Inductee (Pi Chapter), Minneapolis, MN.
- 2016 Best Student Seminar Presentation Award, *Division of Biostatistics*, University of Minnesota, Minneapolis, MN.
- 2015 [Public Health Impact Award](#), *School of Public Health Research Day*, University of Minnesota, Minneapolis, MN.
- 2015 Finalist, [Dow Sustainability Innovation Student Challenge Award \(SISCA\)](#), Institute on the Environment, Minneapolis, MN.
- 2014 Best Paper Award, *Division of Biostatistics*, University of Minnesota, Minneapolis, MN.
- 2014 Second prize for best abstract and presentation, *School of Public Health Research Day*, University of Minnesota, Minneapolis, MN.
- 2003-2008 Awards for academic excellence in several semesters, *Indian Statistical Institute*, Kolkata, India.

Invited Presentations

- Feb 2017 Department of Mathematics and Statistics, University of Maryland, *Baltimore County, MD*.
- Feb 2017 CDC Consultation Conference on Key Populations, CDC, *Atlanta, GA*.
- Dec 2016 Platinum Jubilee International Conference on Applications of Statistics, Calcutta University, *Kolkata, India*.
- Nov 2016 President's Emergency Plan for Aids Relief, *Washington DC*.
- Feb 2016 Department of Statistical Science, Duke University, *Durham, NC*.
- Feb 2016 Department of Biostatistics, University of Michigan, *Ann Arbor, MI*.
- Feb 2016 Department of Biostatistics, Johns Hopkins University, *Baltimore, MD*.
- Feb 2016 Department of Statistics, University of California, *Irvine, CA*.
- Feb 2016 Department of Biostatistics, University of North Carolina, *Chapel Hill, NC*.
- Jan 2016 Division of Biostatistics Student Seminar, University of Minnesota, *Minneapolis, MN*.
- Dec 2015 International Indian Statistical Association Conference, *Pune, India*.
- Aug 2010 Mahalanobis International Symposium on Statistics, *Kolkata, India*.

Contributed Presentations

- July 2017 Spatial Statistics Conference, *Lancaster, UK*.
- Aug 2016 Joint Statistical Meetings, *Chicago, IL*.
- Mar 2016 Eastern North American Region Meetings (ENAR), International Biometric Society, *Austin, TX*.
- Dec 2015 2015 Dow Sustainability Innovation Student Challenge Award (SISCA), *Minneapolis, MN*.

- Mar 2015 Eastern North American Region Meetings (ENAR), International Biometric Society, *Miami, FL*.
- Aug 2014 Joint Statistical Meetings, *Boston, MA*.
- Jun 2014 Pan-American Advanced Study Institute on Spatio-Temporal Statistics, *Buzios, Brazil*.
- Mar 2014 Eastern North American Region Meetings (ENAR), International Biometric Society, *Baltimore, MD*.

Poster Presentations

- Apr 2015 G70: A Celebration of Alan Gelfand's 70th Birthday, *Durham, NC*.
- Apr 2015 University of Minnesota School of Public Health Annual Research Day, *Minneapolis, MN*.
- Jul 2014 ISBA World Meeting, *Cancun, Mexico*.
- Jun 2014 Conference on Nonparametric Statistics for Big Data and Celebration to Honor Professor Grace Wahba, *Madison, WI*.
- Apr 2014 University of Minnesota School of Public Health Annual Research Day, *Minneapolis, MN*.
- Oct 2013 University of Minnesota U-Spatial Symposium, *Minneapolis, MN*.

Other Presentations at Hopkins

- Apr 2017 Spatial disease mapping using Directed Acyclic Graph Autoregressive (DAGAR) models, *Small Area Estimation and Spatial Statistics Working Group*.
- Mar 2017 Spatial Analysis with Big and Small Data, *Department of Biostatistics*.
- Dec 2016 Large Scale Spatio-temporal Interpolation of Environmental Pollutants, *Department of Biostatistics*.
- Nov 2016 Approaches to population size estimation for key populations, *Small Area Estimation and Spatial Statistics Working Group*.
- Sept 2016 Bayesian Models for High Dimensional Spatial Data, *Department of Biostatistics*.
- Sept 2016 Bayesian Models for High Dimensional Spatial Data, *Small Area Estimation and Spatial Statistics Working Group*.

Teaching Experience

At Hopkins

- Spring 2017 Special topics: scalable methods for large spatial data.

Teaching Assistant, Division of Biostatistics, University of Minnesota

- Spring 2015 Advanced Statistical Inference.
Instructors: Dr. Cavan Reilly and Dr. David Vock

- Fall 2014 Probability Models for Biostatistics.
Instructor: Dr. Baolin Wu
- Spring 2014 Bayes Decision Theory and Data Analysis.
Instructor: Dr. Sudipto Banerjee
- Spring 2014 Advanced Statistical Inference.
Instructors: Dr. Julian Wolfson and Dr. David Vock
- Fall 2013 Probability Models for Biostatistics.
Instructor: Dr. Baolin Wu
- Spring 2012 Advanced Regression.
Instructor: John Hughes, Ph.D
- Fall 2012 Statistical Methods for Correlated Data.
Instructor: Dr. Julian Wolfson

Other Research Experience

- 2015–2016 Inter-disciplinary Doctoral Dissertation Fellow, *Institute on the Environment, University of Minnesota*, Minneapolis, MN.
Mentor: Dr. Arindam Banerjee
- 2012-2015 Research Assistant, *Division of Biostatistics, University of Minnesota*, Minneapolis, MN.
Supervisor: Dr. Sudipto Banerjee
- Summers of 2015 & 2014 Research Consultant, *Geospatial Lab, Michigan State University*.
Supervisor: Dr. Andrew O. Finley
- Summer 2007 Visiting Student Research Program (Mathematics), *Tata Institute of Fundamental Research*, Mumbai, India.

Work Experience

- 2011–2012 Quantitative Analyst, *Morgan Stanley*, New York, NY.
- 2010–2011 Quantitative Analyst, *Morgan Stanley*, Mumbai, India.
- Summer 2009 Quantitative Analyst Intern, *Morgan Stanley*, Mumbai, India.
- Summer 2008 Analytics Intern, *SYSTAT Software Asia Pacific Ltd*, Bangalore, India.

Professional Activities

- Reviewer for *Journal of the American Statistical Association*
Journal of Computation and Graphical Statistics
Annals of Applied Statistics
Biometrics
Journal of the Royal Statistical Society
Environmetrics

Spatial Statistics
Statistics in Medicine
Advances in Statistical Climatology, Meteorology and Oceanography

Session *Joint Statistical Meetings, 2014, Boston, MA*
Chair

Professional Memberships

American Statistical Association

Eastern North American Region International Biometric Society