

# Abhirup Datta

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## Academic Appointments

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

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## 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.

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## Research Interests

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

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## 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. (In preparation) *Spatial Disease Mapping using Directed Acyclic Graph Autoregressive Model*

## 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 Outstanding Teaching Assistant Award, *Division of Biostatistics, University of Minnesota*, Minneapolis, MN.

### *Conference Travel Awards*

- 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*.

## Presentations at Hopkins

- 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*.

## 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.

## Teaching Experience

*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

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

## Professional Memberships

American Statistical Association

Eastern North American Region International Biometric Society