CURRICULUM VITAE
Abhirup Datta

PERSONAL DATA

Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health.
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EDUCATION, TRAINING

○ PhD, University of Minnesota, Twin Cities, MN, Biostatistics (2016).
○ MStat, Indian Statistical Institute, Kolkata, India, Specialization in Math-Stat-Probability (2010).
○ BStat (Hons.), Indian Statistical Institute, Kolkata, India (2008).

PROFESSIONAL EXPERIENCE

○ 2016 – present: Assistant Professor, Department of Biostatistics, Johns Hopkins University.
○ 2010 – 2012: Quantitative analyst, Morgan Stanley.

PROFESSIONAL MEMBERSHIPS

○ American Statistical Association
○ International Biometric Society (Eastern North American Region (ENAR))
○ International Indian Statistical Association (IISA)
○ The International Environmetric Society (TIES) of the International Statistical Institute (ISI)

PROGRAM DEVELOPMENT

○ Review-panel National Science Foundation (NSF) Division of Mathematical Sciences (DMS), 2020
○ Scientific Program Committee for the 2020 International Indian Statistical Association conference (IISA).
○ Student poster competition judge, IISA INDSTAT (2019).
○ Session Chair, IISA INDSTATS (2019).
○ Session Chair, Joint Statistical Meetings (2019).
○ Session Organizer, Joint Statistical Meetings (2019).
○ Student paper award reviewer, Section on Bayesian Statistical Science, Joint Statistical Meetings (2019).
○ Session Organizer, Joint Statistical Meetings (2018).
○ Student paper award reviewer, Section on Bayesian Statistical Science, Joint Statistical Meetings (2018).
○ Session Chair, Joint Statistical Meetings (2014).

PEER REVIEW *The numbers in parentheses indicate the count of manuscripts reviewed, excluding revisions.*

Advances in Statistical Climatology Meteorology and Oceanography (1), Annals of Applied Statistics (4), Bayesian Analysis (1), Biometrics (4), Biometrika (1), Brazilian Journal of Probability and Statistics (1), Computational Statistics and Data Analysis (CSDA) (3), Electronic Journal of Statistics (1), Environmetrics (2), IEEE Transactions on Pattern Analysis and Machine Intelligence (1), Journal of Agricultural Biological and Environmental Statistics (JABES) (1), Journal of the American Statistical Association Applications and Case Studies (JASA-ACS) (2), Journal of the American Statistical Association Theory and Methods (JASA-TM) (7), Journal of Computation and Graphical Statistics (JCGS) (4), Journal of Multivariate Analysis (JMVA) (1), Journal of the Royal Statistical Society Series B (JRSSB) (1), Journal of the Royal Statistical Society Series C (JRSSC) (1), Sankhya A (2), Scientific Reports (1), Spatial Statistics (3), Statistica Sinica (3), Statistical Computing (1), Statistics in Medicine (1)

HONORS AND AWARDS

○ Honorable mention: Savage Award Applied Methodology, International Society for Bayesian Analysis (ISBA) (2018).

○ ASA Outstanding Statistical Application Award, American Statistical Association (2017).

○ ENAR Distinguished Student Paper Award, International Biometric Society, Austin, TX (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 (2016).

○ Inter-disciplinary Doctoral Fellowship 2015-16, Division of Biostatistics, University of Minnesota Graduate School, Minneapolis, MN (2015).

○ JSM Student Paper Award, American Statistical Association, Section on Bayesian Statistical Science, Boston, MA (2014). Also selected for best paper award in Statistics and the Environment Section

○ Best Paper Award, Division of Biostatistics, University of Minnesota, Minneapolis, MN (2014).

○ **Teaching:**

○ Excellence in Teaching, Johns Hopkins Bloomberg School of Public Health, Fourth Quarter, Probability IV (2018).

○ Outstanding Teaching Assistant Award, Division of Biostatistics, University of Minnesota, Minneapolis, MN (2014).

○ **Peer review:**

○ Top 1% of reviewers in Mathematics, Publons (2018)

○ Top 1% of reviewers in Mathematics, Publons (2017)

○ **Conference Travel Awards:**

○ ISBA World Meeting, International Society for Bayesian Analysis, Edinburgh, UK (2018).

○ G70 Conference, Duke University, Durham, NC (2015).

○ 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 (2014).

PUBLICATIONS *The white numbers in black boxes indicate first author (including equal contributions) or senior author manuscripts, * indicates equal contributions.*

Published Peer-Reviewed Articles

[1] **Datta A**, Pita, A, Rao, A, Sithole, B, Mnisi, Z, and Baral, S. ► Size Estimation of Key Populations in the HIV Epidemic in eSwatini using incomplete and misaligned capture-recapture data *Annals of Applied Statistics (to appear)*

[2] **Datta A**, Fiksel J, Amouzou A, Zeger S. ► Regularized Bayesian transfer learning for population level etiological distributions *Biostatistics (to appear)*

[3] **Datta A**, Banerjee S, Hodges JS., Gao, L. ► Spatial disease mapping using Directed Acyclic Graph Auto-Regressive (DAGAR) models *Bayesian Analysis (to appear)*

[4] Flores-Moreno H, Fazayeli F, Banerjee A, **Datta A**, Kattge J, Butler EE, 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, Reich PB. (2019) ► Robustness of trait connections between multiple plant organs across environmental gradients, growth forms *Global Ecology and Biogeography 28(12), 1806–1826*

[5] **Datta A**, Zou H. ► A note on cross-validation for Lasso under measurement errors *Technometrics (to appear)*

[6] Taylor-Rodriguez D, Finley AO, **Datta A**, Babcock C, Andersen H, Cook BD, Morton DC, Banerjee S. ► Spatial Factor Models for High-Dimensional, Large Spatial Data: An Application in Forest Variable Mapping *Statistica Sinica (to appear)*

[7] Zhang L, **Datta A**, Banerjee S. (2019) ► Practical Bayesian Inference for Massive Spatial Data on Modest Computing Environments *Statistical Analysis and Data Mining: The ASA Data Science Journal 12.3:197-209.*

8 Finley AO, **Datta A**, Cook BC, Morton DC, Andersen HE, Banerjee S. (2019) ► Efficient algorithms for Bayesian Nearest Neighbor Gaussian Processes *Journal of Computational and Graphical Statistics 1-14.*

9 Heaton MJ, **Datta A**, Finley AO, Furrer R, Guhaniyogi R, Gerber F, Gramacy RB, Hammerling D, Katzfuss M, Lindgren F, Nychka DW, Sun F, Zammit-Mangion A. (2019) ► A Case Study Competition Among Methods for Analyzing Large Spatial Data *Journal of Agricultural, Biological and Environmental Statistics 24(3) 398–425.*

10 **Datta A**, Lin W, Rao A, Diouf D, Kouame A, Edwards JK, Bao L, Louis TA, Baral SB (2019) ► Bayesian estimation of MSM population in Côte d'Ivoire *Statistics and Public Policy 6(1), 1-13.*

11 **Datta A**, Zou H, Banerjee S. (2019) ► Bayesian high-dimensional regression for change point analysis *Statistics and Its Interface 12(2), 253-264.*

12 Edwards JK, Hileman S, Donastorg Y, Sanchez R, Zadrozny S, Baral SB, Hargreaves J, Fearon E, Zhao J, **Datta A**, Weir SS. (2018) ► Estimating sizes of key populations at the national level: considerations for study design, analysis *Epidemiology 29(6): 795–803*

13 Saha A, **Datta A.** (2018) ► BRISC: Bootstrap for rapid inference on spatial covariances *Stat e184*

14 **Datta A**, Zou H. (2017) ► CoCoLasso for High-dimensional Error-in-variables Regression *Annals of Statistics 45(6): 2400-2426*

15 *Butler EE, * **Datta A.** / ⋯ 48 authors ⋯ / Reich, PB. (2017) ► Mapping local and global variability in plant trait distributions *Proceedings of the National Academy of Sciences 114(51): E10937–E10946*

16 **Datta A**, Banerjee S, Finley AO, Hamm NAS, 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 10(3): 1286-1316*

17 **Datta A**, Banerjee S, Finley AO, Gelfand AE. (2016) ► On nearest-neighbor Gaussian process models for massive spatial data *Wiley Interdisciplinary Reviews: Computational Statistics 8(5) 162-171*

18 **Datta A**, Banerjee S, Finley AO, Gelfand AE. (2016) ► Hierarchical Nearest Neighbor Gaussian Process models for Large Geostatistical Datasets *Journal of the American Statistical Association 111(514) 800-812*

Manuscripts Under Review

19 **Datta, A,** Saha, A, Levy-Zamora, M, Buehler, Colby, Hao, L, Xiong, F, Gentner DR, Koehler K ► Statistical field calibration of a low-cost PM2.5 monitoring network in Baltimore

20 Fiksel J, **Datta A**, Amouzou A, Zeger S. ► Generalized Bayesian Quantification Learning

21 Bérubé S, **Datta A**, Li Q., Wang C, Louis TL. ► Percentile-based residuals for model assessment

22 Gao, L., **Datta A**, Banerjee S, ► Spatial Modeling for Correlated Cancers Using Bivariate Directed Graphs

23 Finley AO, **Datta A**, Banerjee S. (2019) ► spNNGP R package for Nearest Neighbor Gaussian Process models

Software

1 **BRISC (6897 CRAN downloads as of March 2, 2020)**

2 **calibratedVA (Github download stats not available)**

3 **spNNGP (7774 CRAN downloads as of March 2, 2020)**

TEACHING

Advisees

1 Fiksel, Jacob, Doctor of Philosophy, Biostatistics (2015 – present).

2 Saha, Arkajyoti, Doctor of Philosophy, Biostatistics (2016 – present, co-advised with Nilanjan Chatterjee).

3 Dey, Debangan, Doctor of Philosophy, Biostatistics (2017 – present, co-advised with Vadim Zipunnikov).

4 Gilbert, Brian, Doctor of Philosophy, Biostatistics (2019 – present, co-advised with Betsy Ogburn).

5 Pita, Andrew, Master of Science, Biostatistics (2017 – 2019)

Classroom Instruction - Principal Instructor

○ 140.724 Probability Theory IV (2020).
○ 140.724 Probability Theory IV (2019).
○ Biostatistics PhD seminar (2019).
○ 140.724 Probability Theory IV (2018).
○ 140.850 Advanced spatial statistics (2018).
○ 140.850 Scalable methods for large spatial data (2017).

Classroom Instruction - Invited Lecturer (Other)

○ Full day short course on Bayesian models for high dimensional spatial data, Joint Statistical Meetings (2017).

RESEARCH GRANT PARTICIPATION *Bold titles indicates grants funded as a Principal Investigator.*

Ongoing Research Support

- *Cholera Burden and Transmission Modeling (Bill & Melinda Gates Foundation)*
  Dates: Sep 2019 to Jul 2022.
  Principal Investigator: Justin Lessler.
  Responsibility: Co-investigator.

- ***Highly multivariate geo-statistics using graphical models (NSF DMS-1915803)***
  Dates: July 2019 to June 2022.
  Principal Investigators: Abhirup Datta.
  Responsibility: Principal Investigator.

- *Comprehensive Mortality Surveillance for Action (COMSA)- Mozambique (Bill & Melinda Gates Foundation)*
  Dates: Jan 2017 to Dec 2020.
  Principal Investigator: Agbessi Amouzou.
  Responsibility: Co-investigator.

- *Individualized spatial topology in functional neuroimaging (NIBIB R01)*
  Dates: July 2018 to Mar 2021.
  Principal Investigator: Martin Lindquist.
  Responsibility: Co-investigator.

- *Improved Heritability Estimation by Spatial Mapping of Genetic Relationships (University of Minnesota (Prime: NIH R21))*
  Dates: July 2018 to Jun 2020.
  Principal Investigator: Saonli Basu.
  Responsibility: Principal investigator on sub-contract.

Completed Research Support

- ***Statistical Maps of Air Quality in Baltimore City Using Low-Cost Monitoring Data (Bloomberg American Health Initiative Spark Award)***
  Dates: July 2018 to June 2019.
  Principal Investigators: Abhirup Datta and Kirsten Koehler.
  Responsibility: Principal Investigator.

- *Project SOAR – Supporting Operational AIDS Research (USAID SH142)*
  Dates: Oct 2016 to Mar 2019.
  Principal Investigator: Deanna Kerrigan.
  Responsibility: Statistical Consultant.

ACADEMIC SERVICE

Department of Biostatistics

○ Member, Graduate students admissions committee (2019 - present)

○ Member, Curriculum committee, Biostatistics Retreat (2018)

○ Member, Faculty Recruitment Committee (2017).

○ Organizer, Biostatistics departmental seminars (2017).

INVITED PRESENTATIONS ** indicates presentations at scientific meetings.*

1. *Mar 2020 Eastern North American Region Meetings (ENAR), International Biometric Society, Nashville, TN

2. *Dec 2020 International Indian Statistical Association Conference, Mumbai, India.

3. *Aug 2019 International Statistical Institute World Congress, Kuala lampur, Malaysia.

4. *Aug 2019 Joint Statistical Meetings, Denver, CO.

5. *May 2019, LRI Causes and Etiologies Meeting, Baltimore, MD.

6. *Aug 2018 Joint Statistical Meetings, Vancouver, Canada.

7. *Jun 2018 ISBA World Meeting, Edinburgh, UK.

8. *Mar 2018 Eastern North American Region Meetings (ENAR), International Biometric Society, Atlanta, GA.

9. *Dec 2017 International Indian Statistical Association Conference, Hyderabad, India.

10. *Dec 2017 10th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK.

11. *Nov 2017 American Public Health Association Annual Meeting, Atlanta, GA.

12. *Oct 2017 UNAIDS Reference Group Fall Meeting 16-18 October 2017, London, UK.

13. *Feb 2017 CDC Consultation Conference on Key Populations, CDC, Atlanta, GA.

14. *Dec 2016 Platinum Jubilee International Conference on Applications of Statistics, Calcutta University, Kolkata, India.

15. Sept 2019, Department of Statistics, Penn State University, State College, PA

16. Feb 2019, Department of Biostatistics, UCLA, Los Angeles, CA

17. Jan 2019 Interdisciplinary Statistical Research Unit, Indian Statistical Institute, Kolkata, India.

18. Feb 2017 Department of Mathematics and Statistics, University of Maryland , Baltimore County, MD.

19. Feb 2016 Department of Statistical Science, Duke University, Durham, NC.

20. Feb 2016 Department of Biostatistics, University of Michigan, Ann Arbor, MI.

21. Feb 2016 Department of Biostatistics, Johns Hopkins University, Baltimore, MD.

22. Feb 2016 Department of Statistics, University of California, Irvine, CA.

23. Feb 2016 Department of Biostatistics, University of North Carolina, Chapel Hill, NC.