RAJI BALASUBRAMANIAN

CURRICULUM VITAE

CONTACT INFORMATION

Department of Biostatistics and Epidemiology
University of Massachusetts Amherst
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Amherst, MA 01003 USA

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EDUCATION

Mount Holyoke College 1996
BA, Mathematical Sciences
South Hadley, MA USA

Harvard University 2002
T.H. Chan School of Public Health
Sc.D., Biostatistics
Boston, MA USA
Advisor: Professor Stephen W. Lagakos
Thesis: *Estimation of a failure time distribution based on imperfect diagnostic tests, with application to HIV vertical transmission studies*

POSTDOCTORAL FELLOWSHIP

Harvard University 2002-2004
T.H. Chan School of Public Health
Research Associate/Postdoctoral Research Fellow in Biostatistics
Boston, MA USA
Advisor: Professor Stephen W. Lagakos

APPOINTMENTS

Associate Professor of Biostatistics 2014-present
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst
Amherst, MA USA

Assistant Professor of Biostatistics 2008-2014
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst
Amherst, MA USA

Director of Biostatistics 2004-2008
B. G. Medicine Inc. (formerly Beyond Genomics Inc.)
Waltham, MA USA

REFEREED PUBLICATIONS

1. Alexander J*, **Balasubramanian R***, Martin J*, Monahan K*, Pollatsek H, Sen A* (2000). Ruling out (160,54,18) difference sets in some non-abelian groups, Journal of Combinatorial Designs, 8: pp. 221-231. * *equal contribution*

2. **Balasubramanian, R.**, Lagakos, S. W. (2001). Estimation of timing of mother-infant transmission of HIV, Biometrics, 57, pp. 1048-1058.

3. **Balasubramanian, R.**, Lagakos, S. W. (2003). Estimation of a failure time distribution based on imperfect diagnostic tests, Biometrika, 90 (1), pp. 171-182.

4. **Balasubramanian, R.**, Lagakos, S. W. (2004). Analyzing time-to-event data in a clinical trial when an unknown proportion of subjects has experienced the event at entry, Biometrics, 60(2), pp. 335-

343.

5. **Balasubramanian, R.***, LaFramboise, T*, Scholtens, D*, Gentleman, R. (2004). A graph theoretic approach to testing associations between disparate sources of functional genomics data, Bioinformatics, 20 (18), pp. 3353-3362. * *equal contribution*

6. Cunningham, C. K., **Balasubramanian, R.**, Delke, I., Maupin, R., Mofenson, L., Dorenbaum, A., Sullivan, J. L., Gonzalez-Garcia, A., Thorpe, E., Rathore, M., Gelber, R. D. (2004). The Impact of Race/Ethnicity on Mother-to-Child HIV Transmission in the U.S. in Pediatric AIDS Clinical Trials Group Protocol 316, Journal of the Acquired Immune Deficiency Syndrome (JAIDS), 36 (3), pp. 800-807.

7. Watts, DH, **Balasubramanian, R.**, Maupin, R, Delke, I, Cunningham, C, Dorenbaum, A, Fiore, S, Newell, ML, Delfraissy, JF, Gelber, RD, Mofenson, L, Culnane, M, Sullivan, JL for the PACTG 316 Team (2004); Maternal Toxicity and Pregnancy Outcome According to Antiretroviral Therapy during Pregnancy: An analysis of the PACTG 316 Study, American Journal of Obstetrics and Gynecology, 190 (2), pp. 506-516.

8. Adourian, A, Jennings, E, **Balasubramanian R.**, Hines WM, Damian D, Plasterer TN, Clish, CB, Stroobant, P, McBurney, R, Verheij, ER, Bobeldijk, I., van der Greef, J, Lindberg, J, Kenne, K, Andersson, U, Hellmold, H., Nilsson, K, Salter, H, Schuppe-Koistinen, I. (2008). Correlation Network Analysis for Data Integration and Biomarker Selection, Molecular Biosystems, 4, pp. 249- 259.

9. McBurney, R.N., Hines, W.M., Von Tungeln, L.S., Schnackenberg, L.K., Beger, R.D., Moland, C.L., Han, T., Fuscoe, J.C., Chang, C., Chen, J.J., Su, Z., Fan, X., Tong, W., Booth, S.A., **Balasubramanian, R.**, Courchesne, P.L., Campbell, J.M., Graber, A., Guo, Y., Juhasz, P., Li, T.Y., Lynch, M., Morel, N.M., Plasterer, T., Takach, E.J., Zeng, C., Beland, F.A. (2009). The Liver Toxicity Biomarker Study: Phase I Design and Preliminary Results, Toxicologic Pathology, 37 (1), pp. 52-64.

10. Andersson, U., Lindberg, J., Wang, S., **Balasubramanian, R.**, Marcusson-Sthl, M., Hannula, M., Zeng, C., Juhasz, P.J., Kolmert, J., Bckstrm, J., Nord, L., Nilsson, K., Martin, S., Glinghammar, B., Cederbrant, K., Schuppe-Koistinen, I. (2009). A systems biology approach to understanding elevated serum alanine transaminase levels in a clinical trial with ximelagatran, Biomarkers, 14 (8), pp. 572 - 586.

11. **Balasubramanian, R.**, Lagakos, S. W. (2010). Estimating HIV incidence based on combined prevalence testing, Biometrics, 66 (1), pp. 1-10.

12. **Balasubramanian, R.**, Muller, L., Kugler, K., Hackl, W., Pleyer, L., Dehmer, M., Graber, A. (2010). The Impact of Storage Effects in Biobanks on Biomarker Discovery in Systems Biology Studies, Biomarkers, 15(8), pp. 677-683.

13. Guo, Y., Graber, A., McBurney, R.N., **Balasubramanian, R.** (2010). Sample size and statistical power considerations in high-dimensionality data settings: A comparative study of classification algorithms, BMC Bioinformatics, 11 (1), pp. 447.

14. Ma, Y., **Balasubramanian, R.**, Schneider, K. L., Culver, A. L., Olendzki, B., Safford, M., Sepavich, D. M., Hebert, J. R., Rosal, M. C., Ockene, J. K., Tinker, L., Carnethon, M., Liu, S., Zorn, M., Pagoto, S. L. (2011). Elevated depressive symptoms, Antidepressant Use and Diabetes in a Large Multiethnic National Sample of Postmenopausal Women, Diabetes Care, 11, pp. 2390-2392.

15. Giri, A., Sturgeon, S. R., Luisi, N., Bertone-Johnson, E., **Balasubramanian, R.**, Reeves, K. W. (2011). Caffeinated coffee, decaffeinated coffee and endometrial cancer risk: A prospective cohort study among U.S. postmenopausal women, Nutrients, 3 (11), pp. 937-950.

16. Culver, A. L., Ockene, I. S., **Balasubramanian, R.**, Olendzki, B. C., Sepavich, D. M., Wactawski-Wende, J., Manson, J. E., Qiao, Y., Liu, S., Merriam, P. A., Rahilly-Tierny, C., Thomas, F., Berger, J. S., Ockene, J. K., Curb, D. J., Ma, Y. (2012). Statin Use and Risk of Diabetes in Postmenopausal Women in the Women's Health Initiative, Archives of Internal Medicine, 172 (2), pp. 144-152.

17. Guo, Y., **Balasubramanian, R.** (2012). Comparative evaluation of classifiers in the presence of statistical interaction between features in high-dimensionality data settings, International Journal of Biostatistics, 8 (1), Article 17.

18. Sturgeon, S.R., Luisi, N., **Balasubramanian, R.**, Reeves, K. W. (2012). Sleep duration and endometrial cancer risk, Cancer Causes and Control, 23(4), pp. 547-553.

19. Ma, Y., Hebert, J. R., Manson, J. E., **Balasubramanian, R.**, Liu, S., Lamonte, M., Bird, C. E., Ockene, J., Qiao, Y., Olendzki, B., Schneider, K. L., Rosal, M. C., Sepavich, D. M., Wactawski-Wende, J., Stefanick, M., Phillips, L. S., Ockene, I. S., Kaplan, R. C., Sarto, G. E., Garcia, L., Howard, B. V. (2012). Determinants of Racial/Ethnic Disparities in Incidence of Clinical Diabetes in Postmenopausal Women in the United States: The Women's Health Initiative 1993-2009, Diabetes Care, 35 (12), pp. 2226-2234.

20. McBurney, R.N., Hines, W.M., Vontungeln, L.S., Schnackenberg, L.K., Beger, R.D., Moland, C.L., Han, T., Fuscoe, J.C., Chang, C.W., Chen, J.J., Su, Z., Fan, X.H., Tong, W., Booth, S.A., **Balasubramanian, R.**, Courchesne, P.L., Campbell, J.M., Graber, A., Guo, Y., Juhasz, P., Li, T.Y., Lynch, M.D., Morel, N.M., Plasterer, T.N., Takach, E.J., Zeng, C., Beland, F.A. (2012). The Liver Toxicity Biomarker Study Phase 1: Markers for the Effects of Tolcapone or Entacapone, Toxicological Pathology, 40(6), pp. 951-964.

21. Sturgeon, S.R., **Balasubramanian, R.**, Schairer, C., Muss, H. B., Zeigler, R. G., Arcaro, K. F. (2012); Detection of Promoter Methylation of Tumor Suppressor Genes in Serum DNA of Breast Cancer Cases and Benign Breast Disease Controls, Epigenetics, 7 (11), pp. 1258-1267.

22. Crawford, L., Reeves, K. W., Luisi, N., **Balasubramanian, R.**, Sturgeon, S. R. (2012); Perineal powder use and the risk of endometrial cancer in postmenopausal women, Cancer Causes and Control, 23 (10), pp. 1673-80.

23. Chan, K. H. K., Niu, T., Ma, Y., You, N. Y., Song, Y., Sobel, E., Hsu, Y., **Balasubramanian, R.**, Qiao, Y., Tinker, L., Liu, S. (2013). Common genetic variants in Peroxisome Proliferator-activated Receptor γ (PPARG) and Clinical Diabetes Risk among Women's Health Initiative Postmenopausal Women, Journal of Clinical Endocrinology & Metabolism, 98(3), pp. E600-604.

24. Qiao, Y., Ma, Y., Olendzki, B., Hebert, J. R., **Balasubramanian, R.**, Rosal, M. C., Schneider, K. L., Liu, S., Sims, S., Hingle, M., Song, Y., Ockene, J. K., Sepavich, D. M., Shikany, J. M., Persuitte, G., Tinker, L. (2013). Racial/ethnic disparities in association between dietary quality and incident diabetes in postmenopausal women in the United States: the Women's Health Initiative 1993-2005. Ethnicity and Health, 19(3): pp. 328-47. [PMCID: PMC3883944]

25. Ma, Y., **Balasubramanian, R.**, Pagoto, S. L., Schneider, K. L., Hebert, J. R., Phillips, L. S., Goveas, J., Culver, A. L., Olendzki, B., Beck, J., Smoller, J. W., Sepavich, D. M., Ockene, J. K., Uebelacker, L., Zorn, M., Liu, S. (2013). Relations of depressive symptoms and antidepressant use to body mass index and selected biomarkers for diabetes and cardiovascular disease, American Journal of Public Health, 103 (8), pp. e34-43.

26. Ma, Y., Hebert, J.R., **Balasubramanian, R.**, Wedick, N., Bird, C.E., Schneider, K.L., Wactawski-Wende, J., Phillips, L. S., Lamonte, M., Olendzki, B., Milagros, C.R., Ockene, J.K., Sepavich, D.M., Garcia, L., Howard, B. V., Mackey, R. H., Merriam, P. A., Liu, S., Johnson, K. C., Ockene, I. S., Manson, J. E. (2013). All-cause, Cardiovascular, and Cancer Mortality Rates in Postmenopausal White, Black, Hispanic, and Asian Women with and without Diabetes in the United States: The Women's Health Initiative 1993-2009, American Journal of Epidemiology, 178(10): pp. 1533-41.

27. **Balasubramanian, R.***, Houseman, E. A.*, Coull, B. A., Lev, M. H., Schwamm, L. H., Betensky, R. A. (2014). Variable importance in matched case-control studies in settings of high-dimensional data, Journal of the Royal Statistical Society, Series C, 63(4), pp. 639-655. * *equal contribution*

28. Gu, X., Shapiro, D. S., Hughes, M. D., **Balasubramanian, R.** (2014). Stratified Weibull Regression Models for Interval Censored Data, R Journal, 6(1), pp. 31-40.

29. Sturgeon, S.R., Arcaro, K. F., Johnson, M. A., **Balasubramanian, R.**, Zorn, M., Jerry, J., Schneider, S.S. (2014). DNA Methylation in Paired Breast Epithelial and White Blood Cells from Women Undergoing Reduction Mammoplasty. Anticancer Research, 34(6): pp. 2985-90. PMID: 24922663.

30. Kintu, A., Hankinson, S. E., **Balasubramanian, R.**, Ertel, K., Bangsberg, D. R., Haberer, J. E. (2015) Sexual relationships outside primary partnerships and abstinence are associated with lower adherence and adherence gaps: data from the Partners PrEP Ancillary Adherence Study, Journal of the Acquired Immune Deficiency Syndrome, 69 (1): pp. 36-43. PMCID: PMC4422183.

31. Gu, X., Ma, Y., **Balasubramanian, R.** (2015). Semi-parametric time to event models in the presence of error-prone, self-reported outcomes - with application to the Women's Health Initiative, Annals of Applied Statistics, 9 (2), pp. 714-730. PMCID: PMC4729390.

32. Frisard, C., Gu, X., Whitcomb, B., Ma, Y., Pekow, P., Zorn, M., Sepavich, D., **Balasubramanian, R.** (2015). Marginal structural models for the estimation of the risk of Diabetes Mellitus in the presence of elevated depressive symptoms and antidepressant medication use in the Women's Health Initiative. BMC Endocrine Disorders, 15(1): 56. PMCID: PMC4603353.

33. Gu, X., **Balasubramanian, R.** (2016). Study design for non-recurring, time to event outcomes in the presence of error-prone diagnostic tests or self-reports, Statistics in Medicine, 35(22), pp. 3961-3975. PMCID: PMC5012924.

34. Ma, Y., Persuitte, G. M., Andrews, C., Hovey, K. M., LaMonte, M. J., Culver, A. L., Manson, J. E., Philips, L. S., Liu, S., Eaton, C., Martin, L. S., Howard, B. V., **Balasubramanian, R.**, Bird, C. E., Ockene, I. S., Sturgeon, S. R., Ockene, J. K., Tinker, L., Nassir, R., Rossouw, J. (2016). Impact of Incident Diabetes on Atherosclerotic Cardiovascular Disease According to Statin Use History Among Postmenopausal Women, European Journal of Epidemiology, 31(8), pp. 747-761. PMCID: PMC5007161.

35. Asafu-Adjei, J., Tadesse, M. G., Coull, B. A., **Balasubramanian, R.**, Lev, M. H., Schwamm, L. H., Betensky, R. A. (2017). Bayesian Variable Selection Methods for Matched Case-Control Studies. International Journal of Biostatistics, 13(1). PMCID: PMC5505078.

36. Sturgeon, S. R., Pilsner, R. J., Arcaro, K. F., Ikuma, K., Wu, H., Kim, S., Chopra-Tandon, N., Karpf, A. R., Ziegler, R. G., Schairer, C., **Balasubramanian, R.**, Reckhow, D. A. (2017). White Blood Cell DNA Methylation and Risk of Breast Cancer in the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial (PLCO), Breast Cancer Research, 19 (1), 94. PMCID: PMC5563066.

37. **Balasubramanian, R.**, Fowler, M.G., Dominguez, K., Lockman, S., Tookey, P. A., Huong, N. N. G., Nesheim, S., Hughes, M. D., Lallemant, M., Toswill, J., Shaffer, N., Sherman, G., Palumbo, P., Shapiro, D. E. (2017): Time To First Positive HIV-1 DNA PCR May Differ With Antiretroviral Regimen In Infants Infected With Non-B Subtype HIV-1, AIDS, 31 (18), pp. 2465-2474. PMCID: PMC5710822.

38. Paynter, N. P., **Balasubramanian, R.**, Gopal, S., Giulianini, F., Tinker, L., Manson, J.E., Cook, N. R., Albert, C. M., Clish, C., Rexrode, K. M. (2018). Metabolic Predictors of Incident Coronary Heart Disease in Women, Circulation, 137(8), pp. 841-853. PMCID: PMC5854187.

39. Xu, H., Gu, X., Tadesse, M. G., **Balasubramanian, R.** (2018). A Modified Random Survival Forests Algorithm for High Dimensional Predictors and Self-Reported Outcomes, Journal of Computational and Graphical Statistics, 27:4, pp. 763-772. PMCID: PMC6369914.

40. Tabung, F. K., Giovannucci, E. L., Giuliani, F., Liang, L., Chandler, P. D., **Balasubramanian,R.**, Manson, J. E., Feliciano, E. M. C., Hayden, K. M., Van Horn, L., Rexrode, K. M. (2018). An empirical dietary inflammatory pattern score is associated with circulating inflammatory biomarkers in postmenopausal women, Journal of Nutrition, 148 (5), pp. 771 - 780. PMCID: PMC5972616.

41. Perez-Caraballo, A. M., Ma, Y., Ockene, J. K., Reeves, K. W., **Balasubramanian, R.**, Stanczyk, F. Z., Allison, M. A., Chen, C., Wang, L., Manson, J. E., Sturgeon, S. R. (2018). Association of Urinary Levels of 6-sulfatoxymelatonin (aMT6s) with Prevalent and Incident Hypertension, Chronobiology International, 35 (8), pp. 1115-1121.

42. Xu, H.*, Qian, J.*, Paynter, N. P., Zhang, X., Whitcomb, B. W., Tworoger, S. S., Rexrode, K. M., Hankinson, S. E., **Balasubramanian, R.** (2019): Estimating the area under the Receiver Operating Characteristic curve in matched case control studies, Statistics in Medicine, 38 (3), pp. 437-451. * equal contribution. PMCID: PMC6768691.

43. Tabung, F. K., **Balasubramanian, R.**, Liang, L., Clinton, S. K., Feliciano, E. M., Manson, J. E., Van Horn, L., Wacktawski-Wende, J., Clish, C. B., Giovannucci, E. L., Rexrode, K. M. (2019). Identifying metabolomic profiles of insulinemic dietary patterns, Metabolites, 9(6), 120. PMCID: PMC6630814

44. Tabung, F. K., Liang, L., Huang, T., **Balasubramanian, R.**, Zhao, Y., Chandler, P. D., Manson, J. E., Feliciano, E. M., Hayden, K. M., Van Horn, L., Giovannucci, E. L., Rexrode, K. M. (2019). Identifying Metabolomic Profiles of Inflammatory Diets in Postmenopausal Women, Clinical Nutrition, 39(5):1478-1490. PMCID: PMC6918009.

45. Chiou, S. H, Betensky, R., **Balasubramanian, R.** (2019). The missing indicator approach for censored covariates in logistic regression models, Annals of Epidemiology, 38, 57- 64. PMCID: PMC6812630.

46. **Balasubramanian, R.**, Paynter, N. P., Manson, J.E., Zhao, Y., Chen, J.C., Vitolins, M., Clish, C., Albert, C., Rexrode, K. M. (2019). Metabolomic profiles associated with all-cause mortality in the Women's Health Initiative, International Journal of Epidemiology, 49(1):289-300. PMCID: PMC7124492.

47. Foulkes, A. S., **Balasubramanian, R.**, Qian, J., Reilly, M. P. (2020). Non-random sampling results in biased estimates of transcriptome association, Scientific Reports, 10(1):6193. PMCID: PMC7148323.

48. Chandler, P. D., **Balasubramanian, R.**, Paynter, N., Giulianini, F., Fung, T., Tinker, L. F., Snetselaar, L., Liu, S., Eaton, C., Tobias, D. K., Tabung, F. K., Manson, J. E., Giovannucci, E. L., Clish, C., Rexrode, K. M. (2020). Metabolic Signatures Associated with Western and Prudent Dietary Patterns in Women, American Journal of Clinical Nutrition, 112 (2), p. 268–283. PMCID: PMC7398790.

49. Huang, T.*, **Balasubramanian, R.***, Yao, Y., Clish, C., Tworoger, S., Rexrode, K., Kubzansky, L.**, Hankinson, S.** (2020). Associations of depression with candidate lipid and amino acid metabolites in plasma, Molecular Psychiatry, in press.
*,**: equal contribution.

50. Gu, X., Tadesse, M. G., Foulkes, A. S., Ma, Y., **Balasubramanian, R.** (2020). Bayesian variable selection for high dimensional predictors and self-reported outcomes, BMC Medical Informatics and Decision Making, accepted.

51. **Balasubramanian, R.**, Demler, O, Paynter, NP, Sheehan, R, Manson, JE, Clish, C, Rexrode, KM (2020). Metabolomic Changes with Randomized Hormone Therapy and Associations with Coronary Heart Disease in the Women's Health Initiative, Circulation: Genomic and Precision Medicine, accepted.

Under review:

52. Yao, Y., Shutta, K.H., Nodzenski, M., Lowe, W. L., Scholtens, D. M., **Balasubramanian, R.** (2020). Detecting active subnetworks in weighted metabolomic networks, Metabolites, revision invited.

53. Hu, J., **Balasubramanian, R.**, Li, J., Clish, C.B., Paynter, N.P., Jimeniz, M. C., Albert, C. M., Liu, S., Rosal, M., Nassir, R., Huang, T., Ngo, D., Rexrode, K.M. (2020). Differences in metabolomic profiles between black and white postmenopausal women and the risk of coronary heart disease, submitted.

54. Zeleznik, O., **Balasubramanian, R.**, Ren, Y., Tobias, D., Rosner, B., Peng, C., Bever, A., Frueh, L., Clish, C., Mora, S., Hu, F., Eliassen, H. (2020). Branched chain amino acids and risk of breast cancer, submitted.

55. **Balasubramanian, R.**, Guasch-Ferre, M., Li, J., Zhao, Y., Salas-Salvado, J., Hu, F. B., Clish, C.B., Rexrode, K. M. (2020). Metabolomic profiles associated with incident ischemic stroke and cardiovascular disease, submitted.

56. Zeleznik, O. A.*, **Balasubramanian, R.***, Zhao, Y., Frueh, L., Avila-Pacheco, J., Clish, C. B., Tworoger, S. S., Eliassen, A. H. (2020). Amino acids, amino acid metabolites, dipeptides, and other cationic metabolites and risk of breast cancer, submitted.
*: equal contribution.

57. Shutta, K. H.*, **Balasubramanian, R.***, Huang, T., Jha, S. C., Zeleznik, O. A., Kroenke, C. H., Tinkere, L. F., Smoller, J. W., Casanova, R., Tworoger, S. S., Manson, J.E., Clish, C.B., Rexrode, K. M., Hankinson, S. E.**, Kubzansky, L. D.** (2020). Plasma metabolomic profiles associated with chronic distress in women, submitted.
*,**: equal contribution.

List of general articles and book chapters:

58. Scholtens D., **Balasubramanian R.**, Gentleman R. (2007); Assessing network structure in the presence of measurement error. Statistical Advances in the Biomedical Sciences, Wiley Series in Probability and Statistics.

59. Adourian, A., Plasterer, T.N., **Balasubramanian, R.**, Jennings, E., Wang, S., van der Greef., J., McBurney, R., Muntendam, P., Afeyan, N. (2009); Systems Pharmacology, Biomarkers and Biomolecular Networks. Drug Efficacy, Safety, and Biologics Discovery: Emerging Technologies and Tools, Wiley Series on Technologies for the Pharmaceutical Industry.

INVITED LECTURES

ENAR meeting — March-2002
Statistical methods in HIV vertical transmission clinical trials
Washington, DC USA

Department of Biostatistics, University of Massachusetts - Amherst — Dec-2004
A graph-theoretic approach to testing associations between disparate sources of functional genomics data
Amherst, MA USA

Division of Preventive Medicine, Northwestern Fienberg School of Medicine — Dec-2006
Computational challenges in the analysis of metabolomics data
Chicago, IL USA

Department of Mathematics and Statistics, Mount Holyoke College — Sept-2007
Biostatistics in Public Health and Biomedical Research
South Hadley, MA USA

Department of Mathematics and Statistics, Mount Holyoke College
2008 Lecture in Honor of Professor Lester E. Senechal — Sept-2008
Estimating HIV Incidence based on Combined Prevalence Testing
South Hadley, MA USA

Departments of Mathematics, Smith College — March-2010
Statistical Challenges in high dimensionality data settings - feature selection and class prediction
Northampton, MA USA

Department of Mathematics and Statistics, University of Massachusetts-Amherst — April-2012
Variable importance in matched case-control studies, in settings of high dimensional data
Amherst, MA USA

3rd Annual Clinical and Translational Science Retreat, UMass Medical School — Mar-2012
Variable Importance in Matched Designs for Translation of High-dimensional Data to Clinical Outcomes with Application to Cardiovascular Disease
Worcester, MA USA

Neurostatistics Seminar Series, Department of Biostatistics, Harvard T. H. Chan School of Public Health Nov-2012
Variable importance in matched case-control studies in settings of high dimensional data
Boston, MA USA

Topic Contributed Session, Joint Statistical Meetings Aug-2013
Variable importance in matched case-control studies in settings of high dimensional data
Boston, MA USA

Department of Quantitative Health Sciences, UMass Medical School Sept-2013
Variable importance in matched case-control studies in settings of high dimensional data
Worcester, MA USA

Biostatistics Research Center, Tufts Medical School Apr-2014
Variable importance in matched case-control studies in settings of high dimensional data
Boston, MA USA

Invited session, New England Statistics Symposium Apr-2015
Semi-parametric time to event models in the presence of error-prone, self-reported outcomes - with application to the Women's Health Initiative
Storrs, CT USA

Division of Preventive Medicine, Northwestern Fienberg School of Medicine Dec-2016
Estimating the ROC curve in matched case control studies
Chicago, IL USA

Department of Biostatistics, Harvard T. H. Chan School of Public Health Apr-2017
Estimating the ROC curve in matched case control studies
Boston, MA USA

Women in Data Science Conference Jan-2018
Advancing Women's Health through Data Science
Boston, MA USA

Invited session, International Biometrics Society Conference July-2018
Variable selection in high dimensional datasets in the presence of self-reported outcomes
Barcelona, Spain

Invited session, ENAR Mar-2019
Variable selection in high dimensional datasets in the presence of self-reported outcomes
Philadelphia, PA USA

Invited session, ENAR Mar-2020
Modeling interval censored time to event outcomes with inflation of zeros, with application to pediatric HIV studies
Nashville, TN USA

INVITED WORKSHOPS

Metabolomics 2019 conference Jun-2019
Application of graphical models to metabolomics
The Hague, Netherlands.

UseR 2020 conference Sept-2020
Application of graphical models to metabolomics
converted to virtual session.

POSTERS

RECOMB Regulatory Genomics/Systems Biology Conference Mar-2008
Power and Study Design Considerations for Multivariate Classification in Systems Biology Experiments
Boston, MA USA

American Heart Association (AHA) Epi Lifestyle Scientific Sessions Mar-2017
Estimating the ROC curve in matched case control studies
Portland, OR USA

American Heart Association (AHA) Epi Lifestyle Scientific Sessions Mar-2017
Metabolomic profiles associated with longevity in women
Portland, OR USA

CURRENT RESEARCH FUNDING

NIH/NLM R01 2020-2024
R. Balasubramanian (co-PI)
Source: National Library of Medicine
Title: *Network models for metabolomics*
Role: Co-Principal Investigator (with Denise M. Scholtens)

NIH/NHLBI R01 HL122241 2015-2021
R. Balasubramanian (PI)
Source: National Institutes of Health, National Heart, Lung, Blood Institute
Title: *Statistical methods for large-scale, prospective, epidemiologic studies*
Role: Principal Investigator

NIH/NHLBI R01 HL088521 2016-2020
K. Rexrode (PI)
Source: National Institutes of Health, National Heart, Lung, Blood Institute
Title: *Risk factors of ischemic stroke*
Role: Co-investigator (Lead Biostatistician), PI of subcontract

NIH/NCI R01 CA05038527 2016-2021
H. Eliassen and W. Willet (PIs)
Source: National Institutes of Health, National Cancer Institute
Title: *Risk factors for breast cancer in younger women*
Role: Co-investigator (Lead Biostatistician), PI of subcontract

NIH/NIAID R01 AI138999 2018-2023
S. Koo (PI)
Source: National Institutes of Health, National Institutes of Allergy and Infectious Diseases
Title: *Rapid, breath volatile metabolite-based diagnostic for in vivo identification and antibiotic resistance profiling of bacterial pathogens in ventilator-associated pneumonia*
Role: Co-investigator (Lead Biostatistician), PI of subcontract

NIH/NIDDK R01 DK118057 2019-2023
E. Taylor (PI)
Source: National Institutes of Health, National Institutes of Diabetes and Digestive and Kidney Diseases
Title: *Novel pathways for kidney stone formation*
Role: Co-investigator (Lead Biostatistician), PI of subcontract

NIH/NIA R01 AG051600 2017-2021
S. Hankinson and L. Kubzansky (PIs)
Source: National Institutes of Health, National Institutes of Aging
Title: *Development and application of a metabolomic profile of chronic distress to cardiometabolic risk*
Role: Co-investigator (Lead Biostatistician)

American Cancer Society Mentored Research Scholar 2015-2020
P. Chandler (PI)
Source: American Cancer Society
Title: *Diet, metabolomics and colorectal cancer in the Women's Health Study*
Role: Co-mentor (Biostatistics)

NIH/NCI R01 2019-2023
S. Sturgeon (PI)
Source: National Institutes of Health, National Cancer Institute
Title: *Fruit and vegetable intervention in lactating women to reduce breast cancer risk: effects on breast cell DNA methylation, breast inflammation, and weight*
Role: Co-investigator (Biostatistician)

NIH/NIEHS R15 2019-2022
S. Sturgeon (PI)
Source: National Institutes of Health, National Institute of Environmental Health Sciences
Title: *Environmental disrupting chemicals and breast density in college-aged nulliparous women*
Role: Co-investigator (Biostatistician)

Department of Defense/Breast Cancer Research Program (BCRP) Breakthrough Award 2019-2022
K. Arcaro (PI)
Source: U. S. Department of Defense, Office of Congressionally Directed Medical Research Programs (CDMRP)
Title: *Noninvasive Assessment of Lactating Breasts Using Somatic Mutations and DNA Methylation as a Presymptomatic test for BRCA Breast Cancer*
Role: Co-investigator (Biostatistician)

PENDING RESEARCH FUNDING

NIH/NHGRI R01 2020-2024*
R. Balasubramanian (co-PI with Kathryn M. Rexrode)
Source: National Institutes of Health, National Human Genome Research Institute
Title: *Sex and gender differences in metabolomic networks*
Role: Co-Principal Investigator

NIH/NHGRI R01 2021-2025
K. M. Rexrode (PI)
Source: National Institutes of Health
Title: *Using Metabolomics to Understand CVD Risk in Women with a History of Preterm Delivery*
Role: Co-Investigator (Biostatistician)

NIH/NIAID R21 2020-2022
S. Koo (PI)
Source: National Institutes of Health
Title: *Breath volatile metabolites for the rapid differentiation of COVID-19 and other pneumonia*
Role: Co-Investigator (Biostatistician)

NIH/NIAID U18 2020-2022
(Emergency Awards RADx-RAD: Screening for COVID-19 by Electronic-Nose Technology (SCENT))
S. Koo (PI)
Source: National Institutes of Health
Title: *Rapid detection of volatile organic compound signatures of COVID-19*
Role: Co-investigator (Biostatistician)

PAST RESEARCH FUNDING

NIH/NICHD R21 HD072792 2011-2013
R. Balasubramanian (PI)
Source: National Institutes of Health, National Institute of Child Health and Human Development
Title: *Properties of HIV-1 DNA/RNA assays for detecting HIV infection in infants*
Role: Principal Investigator

NIH/NIDDK R21 DK083700 2010-2013

Y. Ma (PI)
Source: National Institutes of Health, National Institutes of Diabetes and Digestive and Kidney Diseases
Title: *Depression, antidepressant use and risk of diabetes in the WHI*
Role: Co-investigator (Biostatistician), PI of subcontract

NIH/NHLBI WHI-BAA24, HHSN268201300008C 2013-2016
K. Rexrode (PI)
Source: National Institutes of Health, National Heart, Lung, Blood Institute
Title: *Metabolomics of CHD in the WHI*
Role: Co-investigator (Biostatistician), PI of subcontract

NIH/NCI R15 CA170111 2013-2017
S. Sturgeon (PI)
Source: National Institutes of Health, National Cancer Institute
Title: *Epigenotyping of WBC DNA and risk of breast cancer*
Role: Co-investigator (Biostatistician)

NIH/NCI 1U01CA184910 2014-2017
S. Sturgeon (PI)
Source: National Institutes of Health, National Cancer Institute
Title: *Validation of findings from the epigenome-wide association study of breast cancer*
Role: Co-investigator (Biostatistician)

Rays of Hope Pilot Grant 2016-2017
S. Sturgeon (PI)
Source: Baystate Health Foundation
Title: *Associations of BPA and phthalates with breast density in young women*
Role: Co-investigator (Biostatistician)

HONORS AND AWARDS

Magna Cum Laude 1996
Mount Holyoke College

Pre-doctoral fellowship in the Biological Sciences 1997-2002
Howard Hughes Medical Institute

ASPH/Pfizer Young Investigator's Award for Research in Public Health – Nominee 2010
University of Massachusetts - Amherst

Exceptional Merit Award 2015
University of Massachusetts - Amherst

Outstanding Teacher of the Year Award Nominee 2018
School of Public Health and Health Sciences, University of Massachusetts - Amherst

NATIONAL AND INTERNATIONAL SERVICE

Swiss National Science Foundation 2012, 2015
Grant Review Panel

National Institutes of Health
Study Sections

Clinical and Integrative Cardiovascular Sciences (CICS) June 2010; February 2011
NIAAA Collaborative centers for HIV/AIDS and alcohol outcomes research April 2011
NIAAA/NIDA RFA 'Research on comparative effectiveness and implementation

of HIV/AIDS and alcohol interventions' July 2013
AIDS Clinical Studies and Epidemiology (ACE) June 2014
Infectious, Reproductive, Asthma and Pulmonary Conditions (IRAP) June 2015; February 2016
Review of applications for PA15-273 "Harnessing big data to halt HIV" March 2016
Review U24, U01 applications RFA AA-16 001, 002 &003:
Limited competition consortia for HIV/AIDS and alcohol-related research trials. April 2016
IRAP, SSPA member applications. July 2016
ZRG1 AARR-F to review applications for PA15-273 "Harnessing big data to halt HIV" July 2016
NIAA RFA-AA-17-014 Collaborative research in HIV/AIDS,
Alcohol, and related co-morbidities (Collaborative U01) April 2017
Review of applications to the NIH Common Fund Metabolomics Program Initiative June 2017
Infectious, Reproductive, Asthma and Pulmonary Conditions (IRAP) October 2017
Biostatistics Methods and Research Design (BMRD) March 2018
Skeletal Muscle and Exercise Physiology (SMEP) June 2018
ZRG1 PSE-A-02 Member Conflict: Chronic disease and epidemiology A November 2018
Population and Public Health Approaches to HIV/AIDS (PPAH) March 2019
Epidemiology and Population Sciences Fellowships F18 Review June 2019
NIDDK F99/K00 Fellowships Review July 2019
Population and Public Health Approaches to HIV/AIDS (PPAH) November 2019
Population and Public Health Approaches to HIV/AIDS (PPAH) March 2020
Population and Public Health Approaches to HIV/AIDS (PPAH) July 2020

Conference Organization

Organizer, Topic contributed session 2013
Joint Statistical Meetings (JSM), Montreal, Canada

Member of Organizing Committee 2018
New England Statistical Symposium, UMass-Amherst, Amherst, MA

Board Membership

Data safety monitoring board (DSMB), Member 2011-2012
Get IT study on diabetes outcomes
UMass Medical School

iConquerMS Research committee, Member 2014-2016
Accelerated Cure Project (ACP), Waltham, MA

Other Professional Activity

Deputy Statistical Editor 2014-2017
Journal of the American Heart Association (JAHA)

Associate Editor 2018-present
Statistics in Medicine

Referee for scientific journals 2004-present
AIDS Research and Human Retroviruses (2012, 2013), Biometrics (2005, 2012, 2014, 2018), Biostatistics (2009), BMC Proceedings (2011), British Journal of Cancer (2012, 2014), Critical Care Medicine (2016), Infection, Genetics and Evolution (2011), Proteomics (2013), Statistics in Medicine (2013, 2015, 2016).

Classroom Teaching

3-credit (full semester) undergraduate-level courses, primary instructor:

Telling Stories with Data Fall 2019
University of Massachusetts
School of Public Health and Health Sciences

Statistical modeling for health data science Fall 2020
University of Massachusetts
School of Public Health and Health Sciences

3-credit (full semester) graduate-level courses, primary instructor:

Principles of Survival Analysis Spring 2009, Spring 2010, Spring 2011,
University of Massachusetts Spring 2013, Spring 2014, Spring 2015
School of Public Health and Health Sciences Spring 2017

Statistical Methods in Clinical Trials Fall 2011, Fall 2012, Fall 2015
University of Massachusetts
School of Public Health and Health Sciences

Bayesian Analysis in Biostatistics Fall 2013, Fall 2014
University of Massachusetts
School of Public Health and Health Sciences

3-credit (full semester) undergraduate/intro graduate-level courses, primary instructor:

Principles of Biostatistics Fall 2008, Fall 2009, Fall 2010
University of Massachusetts Fall 2016, Fall 2017, Fall 2018
School of Public Health and Health Sciences

1-credit graduate seminars, primary instructor:

PhD Seminar in Bayesian methods Fall 2012
University of Massachusetts
School of Public Health and Health Sciences

PhD Seminar in Biostatistics and Epidemiology Fall 2018
University of Massachusetts
School of Public Health and Health Sciences

PhD Seminar in Biostatistics and Epidemiology Fall 2019
University of Massachusetts
School of Public Health and Health Sciences

SUPERVISION OF STUDENTS

PhD dissertation, primary advisor:

Xiangdong Gu, *Data analysis and study design in the presence of error-prone diagnostic tests*,
Department of Biostatistics and Epidemiology, University of Massachusetts Amherst 2015

Hui Xu, *Statistical methods for high dimensional data arising from epidemiological studies*,
Department of Biostatistics and Epidemiology, University of Massachusetts Amherst 2017

Yubing Yao, Department of Biostatistics and Epidemiology,
University of Massachusetts Amherst current

Yibai Zhao, Department of Biostatistics and Epidemiology,
University of Massachusetts Amherst current

Katherine Shutta, Department of Biostatistics and Epidemiology,
University of Massachusetts Amherst current

Yukun Li*, Department of Biostatistics and Epidemiology,
University of Massachusetts Amherst current

*: Co-advisor with Jing Qian.

M. S. thesis, primary advisor:

Christine Frisard
Application of marginal structural models for causal inference in the Women's Health Initiative
Department of Biostatistics and Epidemiology, University of Massachusetts Amherst 2013

Undergraduate honors thesis, primary advisor:

Anusha Kothapalli, *Modeling mother to child transmission of HIV*
Department of Biostatistics and Epidemiology, University of Massachusetts Amherst 2016

PhD dissertation, committee member:

Kristine Lynch, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2011

Melissa Eliot, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2011

Yan Liu, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2011

Melanie Hosker, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2018

Boqin Sun, Department of Mathematics and Statistics
University of Massachusetts Amherst 2018

Yiding Zhang, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst current

Jingyao Hao, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst current

M.S. thesis, committee member:

Brooke Nichols, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2010

Aimee Kroll, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2010

Ayush Giri, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2011

Lori Crawford, Department of Biostatistics and Epidemiology
University of Massachusetts Amherst 2011

Nicole Ash, Department of Mathematics and Statistics
University of Massachusetts Amherst 2011

Alex Kintu, Department of Mathematics and Statistics
University of Massachusetts Amherst 2013

UNIVERSITY AND COLLEGE COMMITTEES

Positions as chair/co-chair:

Chair, Faculty Search Committee 2013-2014; 2018-2019
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Chair, Personnel Committee 2016-2017; 2017-2018
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Chair, MS/PhD Exam Committee 2008-2016
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Chair, Curriculum Committee 2019-2020; Fall 2020
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Co-chair, MS/PhD Exam Committee 2016-2020; Fall 2020
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Co-chair, Faculty Search Committee 2012-2013
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Co-chair, Biostatistics seminar series 2010-2011
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Positions as member:

Admissions Committee 2019-2020
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Faculty Search Committee 2010-2011, 2011-2012
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Personnel Committee 2014-2015, Fall 2015
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Human Subjects Committee 2010-2011
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Curriculum Committee 2010-2011, 2013-2015, Fall 2015
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst

Biostatistics/Epidemiology Research Committee 2008-2010
Department of Biostatistics and Epidemiology
School of Public Health and Health Sciences
University of Massachusetts, Amherst