

**CURRICULUM VITAE**  
**Raji Balasubramanian, Sc.D.**

**1. Biographical Information**

Address:

University of Massachusetts – Amherst  
Department of Biostatistics & Epidemiology  
404 Arnold House  
715 North Pleasant Street  
Amherst, MA 01003

Phone: (413) 577 0277

Email: rbalasub@umass.edu

**2. Education**

Mount Holyoke College, South Hadley, MA  
B.A., Mathematical Sciences, 1996  
Harvard University, MA  
Sc.D., Biostatistics, 2002

**3. Professional Positions**

Associate Professor, Department of Biostatistics & Epidemiology  
University of Massachusetts – Amherst, 2014-present

Assistant Professor, Department of Biostatistics & Epidemiology  
University of Massachusetts – Amherst, 2008 – 2014

Director, Biostatistics,  
BG Medicine, Inc., Waltham, MA, 2004 – 2008

Research Fellow/Research Associate,  
Harvard School of Public Health, Boston, MA, 2002 – 2004

**4. Honors, Awards, Scholarships**

- Magna Cum Laude, Mount Holyoke College, MA (1996)
- Pre-doctoral Fellowship in the Biological Sciences, Howard Hughes Medical Institute (1997 – 2002)
- ASPH/Pfizer Young Investigator’s Award for Research in Public Health – Nominee (2010)
- Exceptional Merit Award, University of Massachusetts – Amherst (2015): awarded to < 5% of full-time, tenure stream faculty

**5. Professional activities (outside UMass-Amherst)**

Referee Service (Statistical Reviewer)

- Journal of the American Heart Association (2014 – present)

Referee Service (Ad hoc reviewer):

- AIDS Research and Human Retroviruses (2012, 2013)
- Biometrics (2005, 2012, 2014)
- 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)

Member of Center for Scientific Review (CSR) Study Sections:

- Clinical and Integrative Cardiovascular Sciences (June 2010)
- Clinical and Integrative Cardiovascular Sciences (February 2011)
- Special Emphasis Panel to review NIAAA Collaborative Centers for HIV/AIDS and Alcohol Outcomes Research (April 2011)
- Special Emphasis Panel to review NIAAA/NIDA RFA 'Research Research on Comparative Effectiveness and Implementation of HIV/AIDS and Alcohol Interventions (July 2013)
- AIDS and Clinical Epidemiology (ACE) (July 2014)
- Infectious, Reproductive, Asthma and Pulmonary Conditions Study Section (IRAP) (June 2015)
- Infectious, Reproductive, Asthma and Pulmonary Conditions Study Section (IRAP) (February 2016)
- Special Emphasis Panel to review PA15-273 "Harnessing Big Data to Halt HIV." (March 2016)
- Special Emphasis Panel to review U24, U01 applications RFA AA-16 001, 002 &003: Limited Competition: Consortia for HIV/AIDS and Alcohol-Related Research Trials (April 2016)
- Special Emphasis Panel to review IRAP, SSPA member applications (July 2016)
- Special Emphasis Panel (ZRG1 AARR-F) to review "Harnessing Big Data to Halt HIV (July 2016)
- Special Emphasis Panel to review NIAA RFA-AA-17-014 Collaborative Research in HIV/AIDS, Alcohol, and Related Comorbidities (Collaborative U01) (April 2017)
- Special Emphasis Panel to review applications to the NIH Common Fund Metabolomics Program Initiative (June 2017)
- Infectious, Reproductive, Asthma and Pulmonary Conditions Study Section (IRAP) (October 2017)

Other

- Reviewer, Swiss National Science Foundation (2012, 2015)
- Member, Data Safety Monitoring Board (DSMB), Get IT study on diabetes outcomes, University of Massachusetts Medical School (2011 – 2012)
- Organizer, Topic Contributed Session 'Statistical Methods for the Analysis of High-Dimensional Data from Matched Case Control Studies, Joint Statistical Meetings, Montreal, 2013.

- Member, iConquerMS Research Committee, Accelerated Cure Project (ACP), Waltham, MA (2014 – 2016).

## 6. Bibliography

### a. Refereed Research Articles [Chronological Order]

1. Alexander J\*, **Balasubramanian R\***, Martin J\* Monahan K\*, Pollatsek H, Sen A\* (2000); Ruling out (160,54,18) difference sets in some nonabelian groups, *Journal of Combinatorial Designs*, 8: pp. 221-231. *\*equal contribution.*
2. **Balasubramanian R**, Lagakos SW (2001); Estimation of timing of mother-infant transmission of HIV, *Biometrics*, Vol. 57, pp. 1048-1058
3. **Balasubramanian R**, Lagakos SW (2003); Estimation of time-to-event in the presence of error prone diagnostic tests, *Biometrika*, Vol. 90, pp. 171-182
4. **Balasubramanian R**, Lagakos SW (2004); Analyzing time-to-event data in a clinical trial when an unknown proportion of subjects has experienced the event at entry, Vol. 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*, Vol. 20 (18), pp. 3353-3362. *\*equal contribution.*
6. Cunningham CK, **Balasubramanian R**, Delke I, Maupin R, Mofenson L, Dorenbaum A, Sullivan JL, Gonzalez-Garcia A, Thorpe E, Rathore M, Gelber RD (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 M-L, 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*, Vol. 4, pp. 249- 259. [PMID: 18437268]
9. McBurney, R.N., Hines, W.M., Von Tungeln, L.S., Schnackenberg, L.K., Begeer, 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*, Vol. 37 (1), pp. 52 – 64. [PMID: 19171931]
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*, Vol. 14 (8), pp. 572 – 586. [PMID: 19780643]
11. **Balasubramanian R**, Lagakos SW (2010); Estimating HIV incidence based on combined prevalence testing, *Biometrics*, Vol. 66 (1), pp. 1-10. [PMID: 19397583]

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*, Vol. 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). Depressive symptoms, Antidepressant Use and Diabetes in a Large Multiethnic National Sample of Postmenopausal Women, *Diabetes Care*, Vol. 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), 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), 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), 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): 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), 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), 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  $\gamma$  (PPARG) and Clinical Diabetes Risk among Women's Health Initiative Postmenopausal Women, *Journal of Clinical Endocrinology & Metabolism*, 98(3), 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):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), 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): 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), 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), 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): 2985-90.
  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): 36-43.
  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), 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), 3961-3975.
  34. Ma, Y., Persuitte, G. M., Andrews, C., Hovey, K. M., LaMonte, M. J., Culver, A. L., Manson, J. E., Phillips, 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), 747-761.
  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).

36. Xu, H., Gu, X., Tadesse, M. G., **Balasubramanian, R.** (2017). A modified Random Survival Forests algorithm for variable selection in the presence of imperfect self-reports or laboratory based diagnostic tests, *Journal of Computational and Graphical Statistics*, accepted.
37. 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. (2017). Metabolomic Profiles Associated With Coronary Heart Disease in Women, *Circulation*, revision submitted.
38. Susan R Sturgeon; J Richard Pilsner; Kathleen F Arcaro; Kaoru Ikuma; Haotian Wu; Soon-Mi Kim; Nayha Chopra-Tandon; Adam R Karpf; Regina G Ziegler; Catherine Schairer; **Raji Balasubramanian**; David A Reckhow (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*, in press.
39. **Balasubramanian, R.**, Fowler, M.G., Dominguez, K., Lockman, S., Tookey, P. A., Huong, N. N. G., Nesheim, S., Hughes, M. D., Lallemand, M., Toswill, J., Shaffer, N., Sherman, G., Palumbo, P., Shapiro, D. E. (2017): The Association Of Prophylactic Maternal And Infant Antiretroviral Regimen With The Time To Positive HIV-1 DNA Polymerase Chain Reaction In Non-Breastfed Infants Infected Primarily With Non-B Subtype HIV-1 – A Multi Cohort Analysis, *AIDS*, in press.
40. 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. (2017). Association of Urinary Levels of 6-sulfatoxymelatonin (aMT6s) with Prevalent and Incident Hypertension, submitted.
41. Chiou, S. H\*, **Balasubramanian, R.\***, Betensky, R. (2017). The missing indicator approach for censored covariates in logistic regression models, *Statistics in Medicine*, submitted. *\*equal contribution*.
42. Gu, X., Tadesse, M. G., Foulkes, A. S., Ma, Y., **Balasubramanian, R.** (2017). Bayesian variable selection in high dimensional datasets, for non-recurring time to event outcomes ascertained by imperfect self-reports or laboratory based diagnostic tests, in preparation.
43. Xu, H., Qian, J., Paynter, N. P., Hankinson, S. E., Whitcomb, B. W., Rexrode, K. M., **Balasubramanian, R.** (2017): Estimating the area under the Receiver Operating Characteristic (ROC) curve in matched case control studies, in preparation.
44. **Balasubramanian, R.**, Paynter, N. P., Manson, J., Chen, J.C., Vitolins, M., Clish, C., Albert, C., Rexrode, K. M. (2017). Metabolomic profiles associated with total/cardiovascular disease mortality in women, in preparation.

#### **b. Book Chapters [Chronological Order]**

1. 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.
2. 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.

### **7. Sponsored Research**

#### **Completed (last two years)**

1R21HD072792-01A1, NIH, NICHD

09/01/11 – 08/31/15

NCE

R. Balasubramanian (PI)

**Role:** Principal Investigator

**Properties of HIV-1 DNA/RNA Assays for Detecting HIV Infection in Infants**

Combining data from several U.S. and international cohorts, we aim to obtain a better understanding of the characteristics of HIV-1 diagnostic assays in infants and the timing of mother-to-child transmission. This information will guide strategies to optimize HIV diagnostic testing in infants in various populations, and will inform the best approaches for scheduling prophylaxis, particularly when resources are limited.

NHLBI, WHI-BAA24, HHSN268201300008C

3/30/2013-3/30/2016

K. Rexrode (PI)

Role: Co-investigator (Biostatistician)

**Metabolomics of CHD in the WHI**

This proposal will examine the association between metabolomics profiles and risk of coronary heart disease (CHD) among women in the Women's Health Initiative. Metabolomic profile changes with the randomized hormone therapy will also be characterized and will be tested in relation to CHD outcomes.

R15 CA170111 01A1, NIH, NCI

04/01/13- 03/31/17

S. Sturgeon (PI)

**Role:** Co-Investigator (Biostatistician)

**Epigenotyping of WBC DNA and Risk of Breast Cancer**

The goal of this project is to evaluate the association between global measures of white blood cell DNA methylation with risk of breast cancer in a prospective cohort.

U01 NIH

10/1/14 - 7/31/17

S. Sturgeon (PI)

**Role:** Co-investigator (Biostatistician)

**Epigenome-wide Association Study of Breast Cancer: Early Markers and Etiology**

The goal of this project is to evaluate the relationship between epigenetic marks in white blood cell DNA and breast cancer in a prospective cohort, Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial.

1R21AI119692 01

07/01/2015 - 06/30/2017

Sophia Koo (PI)

Role: Consultant (Biostatistician)

**Volatile Metabolite-Based Detection of Clostridium Difficile Infection**

Clostridium difficile infection (CDI) is a major cause of healthcare-associated diarrhea and death worldwide, increasing dramatically in incidence and severity over the past decade. The objective of the proposed research is to identify and validate key components of the distinctive volatile metabolic 'scent' of CDI in stool and in air samples from the patient environment, laying the groundwork for a rapid bedside test for the detection of CDI.

R03

10/01/2016 - 09/30/2017

Denise Scholtens (PI)

Role: Consultant (Biostatistician)

**Bayesian Network Models for Genetics and Metabolomics Studies of Fetal Programming**

Rays Of Hope, Pilot Grant 09/01/2016 -08/30/2017  
S. Sturgeon (PI)  
Role: Co-investigator (Biostatistician)  
**Associations of BPA and phthalates with breast density in young women**

NIH R56 09/01/2016 -08/30/2017  
S. Sturgeon (PI)  
Role: Co-investigator (Biostatistician)  
**Associations of BPA and phthalates with breast density**

**Current**  
R01 NIH 03/01/2015 - 02/27/2019

R. Balasubramanian (PI)  
**Role:** Principal Investigator  
**Statistical methods for large scale, prospective epidemiologic studies**  
In this proposal, we develop and apply new analytical methods to account for error-prone outcomes such as self-reports with a focus on developing methods for study design, causal inference in non-randomized settings and biomarker discovery from high dimensional data. The proposed methods will be applied to data from the Women's Health Initiative to address clinical hypotheses in diabetes and cardiovascular disease research.

American Cancer Society Mentored Research Scholar 7/1/15 – 06/30/2020  
P. Chandler (PI)  
**Role:** Co-mentor (Biostatistics)  
**Diet, Metabolomics and Colorectal Cancer in the Women's Health Study**

2R01HL088521-06A1 NIH, NHLBI 01/01/2016 –12/31/2020  
K. Rexrode (PI)  
**Role:** Co-investigator (Biostatistician)  
**Risk factors of Ischemic Stroke**  
This proposal will examine the association between metabolomics profiles and risk of stroke among women in the Nurses Health Study I and Nurse Health Study II cohorts.

5 R01 CA050385 27 2/1/16 - 1/31/2019  
H. Eliassen and W. Willet (co-PIs)  
**Role:** Co-investigator (Biostatistician)  
**Risk Factors for Breast Cancer in Younger Women**  
This study will evaluate gene expression and metabolomic profiles as risk factors for breast cancer in younger women, among women enrolled in the Nurses Health Initiative.

NIH R01 AG051600 01A1 9/15/2017 – 5/31/2021  
S. Hankinson (PI)  
**Role:** Co-investigator (Biostatistician)  
**Metabolomics of chronic stress**  
This study evaluates metabolomics profiles associated with chronic distress among women



enrolled in the Nurses Health Study and the Women's Health Initiative.

**Submitted (Pending)**

NIH R01 02/01/2018 – 01/31/2022

R. Balasubramanian and D. Scholtens (co-PI)

Role: Co-PI

**Statistical methods for metabolomics studies**

NIH R01 07/01/2018 – 06/30/2022

C. Albert (PI)

Role: Co-investigator (Biostatistician)

**Metabolomics of sudden and arrhythmic death**

NIH R01 07/01/2018 – 06/30/2022

E. Taylor (PI)

Role: Co-investigator (Biostatistician)

**Novel pathways for kidney stone formation**

NIH R01 07/01/2018 – 06/30/2023

S. Koo (PI)

Role: Co-investigator (Biostatistician)

**Rapid, Breath Volatile Metabolite-Based Diagnostic for In Vivo Identification and Antibiotic Resistance Profiling of Bacterial Pathogens in Ventilator-Associated Pneumonia**

**8. Conferences and Symposiums**

**a. Contributed Oral Presentations/Posters**

Power and Study Design Considerations for Multivariate Classification in Systems Biology Experiments, RECOMB Regulatory Genomics/Systems Biology Conference, 2008 [Poster]

**b. Invited Oral Presentations/Seminars**

Statistical methods in HIV vertical transmission clinical trials, International Biometrics Society (ENAR) – 2002

A graph-theoretic approach to testing associations between disparate sources of functional genomics data, School of Public Health, University of Massachusetts – Amherst, 2004

Computational challenges in the analysis of metabolomics data, Department of Preventive Medicine, Fienberg School of Medicine, Northwestern University, 2006

Biostatistics in Public Health and Biomedical Research, Department of Mathematics, Mount Holyoke College, 2007

Estimating HIV Incidence based on Combined Prevalence Testing, 2008 Lecture in Honor of Professor Lester E. Senechal, Mount Holyoke College, 2008

Statistical Challenges in high dimensionality data settings – feature selection and class prediction, Department of Mathematics, Smith College, 2010

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

Variable Importance in Matched Designs for Translation of High-dimensional Data to Clinical Outcomes with Application to Cardiovascular Disease, 3<sup>rd</sup> Annual Clinical and Translational Science Retreat, University of Massachusetts Medical School, 2012

Variable importance in matched case-control studies in settings of high dimensional data, Neurostatistics Seminar Series, Department of Biostatistics, Harvard School of Public Health, 2012

Variable importance in matched case-control studies in settings of high dimensional data, Topic Contributed Session on Statistical Methods for the Analysis of High-Dimensional Data from Matched Case Control Studies, Joint Statistical Meetings (JSM), Montreal, 2013.

Variable importance in matched case-control studies in settings of high dimensional data, Department of Quantitative Health Sciences, UMass Medical School, September 2013.

Variable importance in matched case-control studies in settings of high dimensional data, Biostatistics Research Center, Tufts Medical Center, April 2014.

Semi-parametric Time to Event Models in the Presence of Error-prone, Self-reported Outcomes - with Application to the Women's Health Initiative, New England Statistics Symposium, April 2015

Estimating the Receiver Operating Characteristic Curve in Matched Case Control Studies, Department of Preventive Medicine, Northwestern Fienberg School of Medicine, December 2016.

Estimating the Receiver Operating Characteristic Curve in Matched Case Control Studies, American Heart Association Epi Lifestyle Scientific Sessions, March 2017. (\*poster presentation).

Estimating the Receiver Operating Characteristic Curve in Matched Case Control Studies, Department of Epidemiology, Harvard School of Public Health, April 2017.

## **9. University Service**

Chair, Biostatistics MS/PhD Qualifying Exam Committee, 2008-2016

Co-Chair, Biostatistics MS/PhD Qualifying Exam Committee, 2016-2018

Member, Biostatistics/Epidemiology Research Committee, 2008-2010

Chair, Search Committee for Assistant Professor of Biostatistics, 2013-2014

Co-Chair, Search Committee for Assistant Professor of Biostatistics, 2012-2013

Member, Search Committee for Research Assistant Professor of Biostatistics, 2010-2011

Member, Search Committee for Assistant Professor of Biostatistics, 2010-2012.

Co-Organizer, Biostatistics and Epidemiology Seminar Series, 2010-2011

Member, Curriculum Committee, 2010-2011, 2013-2014; 2014-2015, Fall 2015.

Member, Human Subjects Committee, 2010-2011

Member, Department Personnel Committee, 2014-2015, Fall 2015.

Chair, Department Personnel Committee, 2016-2017.

Chair, Department Personnel Committee, 2017-2018.

## **10. Teaching History**

BIOSTATS 540 (Principles of Biostatistics) – Fall 2008  
BIOSTATS 748 (Principles of Survival Analysis) – Spring 2009  
BIOSTATS 540 (Principles of Biostatistics) – Fall 2009  
BIOSTATS 748 (Principles of Survival Analysis) – Spring 2010  
BIOSTATS 540 (Principles of Biostatistics) – Fall 2010  
BIOSTATS 748 (Principles of Survival Analysis) – Spring 2011  
BIOSTATS 749 (Statistical Methods in Clinical Trials) – Fall 2011  
BIOSTATS 749 (Statistical Methods in Clinical Trials) – Fall 2012  
BIOSTATS 692A (Introduction to Bayesian Computation with R) – Fall 2012  
BIOSTATS 748 (Principles of Survival Analysis) – Spring 2013  
BIOSTATS 697G (Bayesian Analysis in Biostatistics)– Fall 2013  
BIOSTATS 748 (Principles of Survival Analysis) – Spring 2014  
BIOSTATS 697G (Bayesian Analysis in Biostatistics)– Fall 2014  
BIOSTATS 748 (Principles of Survival Analysis) – Spring 2015  
BIOSTATS 749 (Statistical Methods in Clinical Trials) – Fall 2015  
BIOSTATS 540 (Principles of Biostatistics) – Fall 2016  
BIOSTATS 748 (Principles of Survival Analysis) – Spring 2017  
BIOSTATS 540 (Principles of Biostatistics) – Fall 2017

## **11. Advising and Formal Mentoring**

### **a. PhD Dissertations, Chair**

Xiangdong Gu, PhD, Biostatistics (2015)  
Hui Xu, PhD, Biostatistics (2017)  
Yubing Yao, PhD, Biostatistics (in progress)  
Yibai Zhao, PhD, Biostatistics (in progress)

### **b. MS Theses, Chair**

Christine Frisard (Foley), MS, Biostatistics, 2013

### **c. PhD Dissertations, non-Chair role**

Kristine Lynch, PhD, Epidemiology, 2011  
Melissa Eliot, PhD, Biostatistics, 2011  
Yan Liu, PhD in Biostatistics, 2011  
Melanie Hosker, PhD in Epidemiology (in progress)  
Boqin Sun, PhD in Statistics (in progress)

### **d. MS Theses, non-Chair role**

Brooke Nichols, MS in Epidemiology, 2010  
Aimee Kroll, MS in Epidemiology, 2010  
Ayush Giri, MS in Epidemiology, 2011  
Lori Crawford, MS in Epidemiology, 2011  
Nicole Ash, MS in Epidemiology, 2011  
Alex Kintu, MS in Epidemiology, 2013

### **e. Mentored Scientists, Post-Doctoral Fellows**

none

### **f. Undergraduate (Honors Thesis)**

Anusha Kothapalli (2016)