

# Curriculum Vitae

## Saonli Basu

### Contact Information

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### Education

- 2000 - 2005 Ph.D. in Statistics, Department of Statistics, University of Washington, Seattle.
- 1996 - 1998 M.S. in Statistics, Indian Statistical Institute, Calcutta, India.
- 1993- 1996 B.S. in Statistics, Presidency College, University of Calcutta, India.

### Employment

- 2005-present Assistant Professor in the Division of Biostatistics, School of Public Health, University of Minnesota.
- 2001-2005 Research Assistant, Department of Statistics, University of Washington.
- 2000-2001 Teaching Assistant, Department of Statistics, University of Washington.
- 1999 - 2000 Research Associate, Department of Statistics, Indian Statistical Institute.
- 1998-1999 Research Associate, Market Research, ORG MARG, India.

## Peer-reviewed Publications

### Journal Articles

1. Arora, M., Lindgren, B., **Basu, S.**, Nagaraj, S., Gross, M., Weisdorf, D. (2010), Thyagarajan, B., Polymorphisms in the Base Excision Repair Pathway and Graft-versus-Host Disease. *Leukemia* (to appear).
2. Thyagarajan, B., Lindgren, B., **Basu, S.**, Nagaraj, S., Weisdorf, D., Gross, M., Arora, M. (2010), Base Excision Repair: a predictor of treatment outcome after hematopoietic stem cell transplantation. *Biology of Blood and Marrow Transplantation* (to appear).
3. Conrad, H. J., Jung, J., Barczak, M., **Basu, S.**, Seong, W. J. (2010), Retrospective cohort study of the predictors of implant failure in the posterior maxilla. *The International Journal of Oral & Maxillofacial Implants* (to appear).
4. Smith, N. L., Chen, M-H., Dehghan, A., Strachan, D. P., **Basu, S.**, Bis, J. C. , de Maat, M., Rumley, A., Kong, X., Yang, Q., Wiggins, K. L., Van Duijn, C., Mc Ardle, W. L., Pankow, J. S., Johnson, A. D., McKnight, B., Uitterlinden, A., Wellcome Trust Case Control Consortium, Aleksic, N., Meigs, J. B., Peters, A., Koenig, W., Cushman, M., Kathiresan, S., Rotter, J. I., Bovill, E. G., Hofman, A., Boerwinkle, E., Tofler, G. H., Psaty, B. M., Leebek, F., Folsom, A. R., Larson, M. G., Lumley, T., Wittelman, J. C., Tang, W., O'Donnell, C. J. Association of multiple novel genetic loci with plasma levels of factor VII, factor VIII, and von willebrand factor: The CHARGE Consortium, *Circulation*, Vol 121(12): 1382-1392 .
5. He, H., Oetting, W. S., Brott, M. J., **Basu, S.**. Power of Multifactor Dimensionality Reduction and Penalized Logistic Regression for Detecting Gene-Gene Interaction In a Case-Control Study. *BMC Medical Genetics*, Dec 4;10(1):127.
6. He, H., Oetting, W. S., Brott, M. J., **Basu, S.**. Pair-wise multifactor dimensionality reduction method to detect gene-gene interactions in a case-control study. *Human Heredity*, Vol 69(1):60-70.
7. Thumbigere-Math, V., Sabino, M. C., Gopalakrishnana, R., **Basu, S.**, Huckabay, S., Arkadiusz Z., Michalowicz, B. S., Hughes, P. J., Leach, J. W., Swenson, K. K., Swift, J. W., and Basi, D. L. (2009). Bisphosphonate-Associated Osteonecrosis of the Jaw: Clinical features, risk factors, staging management system and treatment outcomes. *Journal of Oral and Maxillofacial Surgery*, Vol 67(9):1904-13.
8. **Basu, S.**, Stephens, M., Pankow, J. S, Thompson, E. A. (2009). A likelihood-based trait-model-free approach for linkage detection of binary trait. *Biometrics*, Vol 66(1): 205-213.

9. Dehghan, A., Yang, Q., Peters, A., **Basu, S.**, Bis, J. C., Rudnicka, A. R., Kavousi M., Chen, M-H., Baumert, J., Lowe, G. D. O., McKnight, B., Tang, W., de Maat, M., Larson, M. G., Eyhermendy, S., McArdle, W. L., Lumley, T., Pankow, J. S., Hofman, A., Massaro, J. M., Rivadeneira, F., Kolz, M., Taylor, K. D., van Duijn, C. M., Kathiresan, S., Illig, T., Aulchenko, Y. S., Volcik, K. A., Uitterlinden, A., Toffler, G. H., Gieger, C., Welcome Trust Case Control Consortium, Psaty, B. M., Couper, D. J., Boerwinkle, E., Koenig, W., O'Donnell, C. J., Witteman, J. C., Strachan, D. P., Smith, N. L., Folsom, A. R. (2009). Association of novel genetic loci with circulating fibrinogen levels: A genome-wide association study in six population-based cohorts. *Circulation: Cardiovascular Genetics*, Vol 2:125-133.
10. Johnson, L. A., Oetting, W. S., **Basu, S.**, Prausa, S., Matas, A., Jacobson, P. A. (2008), Pharmacogenetic effect of the UGT polymorphisms on mycophenolate is modified by calcineurin inhibitors. *Eur J Clin Pharmacology*, Vol 64 (11): 1047-56.
11. Vallee, M. C, Conrad, H. J., **Basu, S.**, Seong, W. J. (2008), Accuracy of friction-style and spring-style mechanical torque limiting devices for dental implants. *Journal of Prosthetic Dentistry*, Vol 100 (2): 86-92.
12. **Basu, S.**, Di, Y. and Thompson, E. A. (2008), Exact Trait-Model-Free Tests for Linkage Detection in Pedigrees. *Annals of Human Genetics*, Vol 72(5): 676-682.
13. **Basu, S.** (2007), A Robust Approach for linkage detection using pedigrees . *Sankhya*, Vol 69 (3): 405-424.
14. Yang, Q., Biernacka. J. M., Chen, M., Houwing-Duistermaat , J. J., Bergemann, T. L., **Basu, S.**, Fan, R., Liu, L., Bourgey, M., Clerget-Darpoux, F., Lin, W., Dupuis, J., Elston, R. C., Cupples, L. A. (2007), Group 4: Using Linkage and Association to Identify and Model Genetic Effects. *Genetic Epidemiology*, Vol 31(Suppl 1): S34-42.
15. Liebeler, C. L., **Basu, S.**, Jackola, D. R. (2007), Allergen-Specific IgG1 Provides Parsimonious Heritability Estimates For Atopy-Associated Immune Responses To Allergens. *Hum Immunology*, Vol 68 (2): 113-21.
16. Jackola, D. R., **Basu, S.**, Liebeler, C. L., Willaert, R., Luah, S.-S., Oetting, W., King, R. A., Blumenthal, M. N. (2006), CD14 Promoter Polymorphisms in Atopic Families: Implications for Modulated Allergen-Specific Immunoglobulin E and G1 Responses. *Int Arch Allergy Immunol*, Vol 139: 217-224.
17. Sieh, W, **Basu, S.**, Fu, Q. A., Rothstein, J. H., Scheet, P. A., Stewart, W., Sung, J. S., Thompson, E. A, Wijsman, E. A. (2005), Comparison of marker types and map assumptions using Markov chain Monte Carlo-based linkage analysis of COGA data. *BMC Genetics*, Vol 6: S11.

18. Thompson, E. A. and **Basu, S.** (2003), Genome Sharing in large pedigrees: multiple imputation of ibd for linkage detection. *Human Heredity*, Vol 56: 119-125.
19. George, A.W., **Basu, S.**, Li, N., Rothstein, J. H., Sieberts, S. K., Stewart, W., Wijisman, E. M. and Thompson, E. A. (2003), Approaches to Mapping Genetically Correlated Complex Traits. *BMC Genetics*, Vol 4: S71.

\* The first author was a graduate student of Dr. Basu and the paper is a part of the master's thesis dissertation.

\*\* Co first-author stated in the manuscript.

## Current Grant Support

### Funded Grants

1. **Title:** A gene-set approach for pathway analysis of genome-wide SNP data with application to type 2 diabetes and related quantitative traits.  
**Source:** NIH/NIDDK - R21  
**Purpose:** This proposal offers a collection of novel statistical methods to study the joint effects of a group of SNPs within a pathway on a complex multifactorial disease, incorporating the possibility of interaction among the SNPs. The model also offers a data reduction strategy that avoids the issues associated with the estimation of a large number of parameter corresponding to a large number of SNPs within a pathway. **Period:** July 2010- June 2012  
**Role:** Principal Investigator.
2. **Title:** Epidemiology of Venous Thrombosis and Pulmonary Embolism  
**Source:** NIH - R01  
**Purpose:** This prospective epidemiologic study seeks to identify factors that contribute to increased risk of venous thromboembolism, i.e., blood clots in veins that may travel and block blood supply to organs. This renewal proposal seeks to identify novel genes that contribute to venous thromboembolism.  
**Period:** March 2008 -January 2012  
**Role:** Co-Investigator. (PI: Aaron Folsom, Division of Epidemiology)
3. **Title:** Genetic Epidemiological Study of Venous Thromboembolism (VTE) and Hemostatic Factors  
**Source:** NIH - R01  
**Purpose:** This proposal seeks to perform genetic association studies of VTE and intermediate phenotypes and investigations of gene-gene and gene-environment interactions in the

etiology of VTE. An anticipated 3447 SNPs in 116 selected candidate genes from CARE, measured on two or more cohorts, are the main focus of the proposal.

**Period:** July 2009-June 2012

**Role:** Co-Investigator. (PI: Weihong Tang, Division of Epidemiology)

4. **Title:** Substance Abuse & Behavioral Disinhibition: Integrating Genes & Environment

**Source:** NIH/NIDA - R01

**Purpose:** Under NIDA's Genes, Environment, and Development Initiative (GEDI), this project will conduct a genome-wide association study to find genetic variants which together with environmental factors affect the risk of alcohol addition, drug abuse, behavioral disinhibition, especially the development of these outcomes at the adolescent stage. The study samples come from 15 years of research on twins and their families from Minnesota Center for Twin and Family Research (MCTFR).

**Period:** January 2009- December 2011

**Role:** Co-Investigator. (PI: William Lacono, Department of Psychology )

5. **Title:** Association of genetic polymorphism with graft-versus-host disease post hematopoietic stem cell transplant

**Source:** NIH - R21

**Purpose:** Graft-versus-host disease is a devastating disease that affects 20-70% of blood and marrow transplant (BMT) recipients. The disease is caused by an immune attack by donor cells on patient tissue. Some genetic factors, including polymorphisms (changes in amino acids in genes that alter their function) may predict patients at high risk of these complications. The proposal aims to identify patients at high risk of complications and death, and subsequently modify their treatment, using the information we learn from our genetic studies, to alter their course. The long term goal is to improve survival in these patients by determining groups at high risk towards whom intensive therapy should be targeted.

**Period:** July 2008 - June 2010

**Role:** Co-Investigator. (PI: Mukta Arora, Department of Medicine )

## Previously Funded Grants

1. **Title:** Genomics of Kidney Transplantation

**Source:** NIH/NIAID - R01

**Purpose:** This grant proposes to study whether genetic variants are, in part, responsible for the differing outcomes of transplant recipients treat with similar immunosuppressive protocols.

**Period:** July 2006 - June 2011.

**Role:** Co-Investigator. (PI: Arthur Matas, Department of Surgery)

2. **Title:** A trait-model-free approach for linkage detection of continuous trait in pedigrees

**Source:** Grant-in-Aid of Research, Artistry, and Scholarship grant

**Purpose:** The proposal aims to develop a statistical model for linkage detection in extended pedigrees for quantitative traits.

**Period:** July 2008- June 2009

**Role:** Principal Investigator.

3. **Title:** A Likelihood-based Approach for Detecting Gene-Gene Interaction in a Case-Control Study

**Source:** Minnesota Medical Foundation

**Purpose:** The proposal aims to develop a statistical model to detect gene-gene interaction in a case control study.

**Period:** July 2008- June 2009

**Role:** Principal Investigator.

## Teaching and Advising

- 09/09 - 12/09 Biostatistics Ph.D. level Course: Probability models.
- 09/08 -12/08 Biostatistics Ph.D. level Course: Probability models.
- 01/08- 05/08 and 01/07-05/07 Biostatistics course for public health majors: Introduction to Biostatistics.
- 09/05-12/05 and 09/06-12/06 Biostatistics Ph.D. level course: Modern Nonparametrics.

## Advising and Committee member

- Li, Xiang; PhD in Biostatistics (2012 expected). Role: PhD thesis advisor.
- Tan, Adrian; MS in Biostatistics (2010 expected). Role: Master's thesis advisor.
- Feng, Wei; MS in Biostatistics (2010 expected). Role: Master's thesis advisor.
- Choi, Jang; PhD in Statistics (2010 expected). Role: PhD Committee member.
- Kirkpatrick, Rob; MS in Psychology (2010 expected). Role: MS Committee member.

- Maki Inoue-Choi, Maki; PhD in Epidemiology (2011 expected). Role: PhD committee member.
- Hall, Kris; MS in Epidemiology (2010 expected). Role: MS Committee member.
- Schladt, David; MS. in Biostatistics (2009). Role: Master's thesis advisor.
- He, Hua; MS in Biostatistics (2008). Role: Master's thesis advisor.
- Vallee, Mark; MS in Dentistry (2008). Role: MS Committee member.
- Hang, Jiayin; PhD in Pharmacy (2008). Role: PhD Committee member.
- Seth, Milan ; MS in Biostatistics (2007). Role: Master's thesis Advisor.
- Rasmussen-Torvik, Laura; PhD in Epidemiology (2007). Role: PhD Committee member.
- Hall, Taryn; MS in Epidemiology (2007). Role: MS Committee member.
- Wang, Dan; MS in Biostatistics (2007). Role: MS Committee member.

## **Professional Service**

- Session Chair: Workshop in Statistical Genetics and Computational Molecular Biology, University of Washington, 2003.
- Referee for journals: Statistics in Medicine, Genetics, BMC Bioinformatics, JAMA, Journal of Dental Research, Genetics, BMC Genomics, Biometrics, Journal of Genetics, Human Heredity, Nucleic Acids Research.
- Reviewer of AHC seed grants.
- Reviewer of a NIH/NIDDK K24 grant.
- Reviewer of NIH Challenge grants.
- Reviewer of NIH RC4 grants.

## **Professional Membership**

- American Statistical Association
- International Biometric Society
- International Genetic Epidemiology Society

## **Honor and Awards**

- Member of Delta-Omega Honorary Society in Public Health, 2010.
- ENAR Distinguished Student Paper Award Winner, 2003.
- Best Student Award, Presidency College, 1996.