CURRICULUM VITAE

Harold T. Bae, Ph.D., M.S.
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School of Biological and Population Health Sciences
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A. EDUCATION AND EMPLOYMENT

Degree:

Ph.D.	Biostatistics	2014	Boston University, Boston, MA *Dissertation Title: Understanding the genetic basis of complex polygenic traits through Bayesian model selection of multiple genetic models and network modeling of family-based genetic data*
M.S.	Health Services Research	2008	The Dartmouth Institute for Health Policy and Clinical Practice, Lebanon, NH
B.A.	Applied Mathematics	2005	Dartmouth College, Hanover, NH

Academic Appointments:

2014 – present	Assistant Professor of Biostatistics School of Biological and Population Health Sciences, College of Public Health and Human Sciences, Oregon State University, Corvallis, OR
2012 – 2014	Graduate Student Instructor Department of Biostatistics, Boston University School of Public Health, Boston, MA
2011 – 2014	Graduate Research Assistant Department of Biostatistics, Boston University School of Public Health, Boston, MA
2011 – 2012	Graduate Teaching Assistant Department of Biostatistics, Boston University School of Public Health, Boston, MA
2008 – 2009	Project Coordinator Veterans Affairs Outcomes Research Group, White River Junction, VT
2008 – 2009	Graduate Teaching Assistant

The Dartmouth Institute for Health Policy and Clinical Practice, Lebanon, NH

B. TEACHING, ADVISING, AND OTHER ASSIGMENTS

Instruction at Oregon State University

Term	Year	Course	Enrollment
Winter	2019	HHS 514 Integrated Approaches to Public Health II	10
Winter	2019	H 564 Computing Tools & Health Data Analysis	17
Fall	2018	HHS 513 Integrated Approaches to Public Health I	13
Fall	2018	H 513 Integrated Approaches to Public Health	53
Spring	2018	H 580 Lin. Reg. & Analysis of Time to Event Data	30
Winter	2018	H 564 Computing Tools & Health Data Analysis	25
Fall	2017	H 513 Integrated Approaches to Public Health	51
Spring	2017	H 578 Introduction to Molecular Epidemiology I	6
Winter	2017	H 564 Computing Tools & Health Data Analysis	16
Winter	2017	H 220 Introduction to Health Data Analysis	64
Spring	2016	H 220 Introduction to Health Data Analysis	74
Winter	2016	H 564 Computing Tools & Health Data Analysis	18
Spring	2015	H 220 Introduction to Health Data Analysis	67
Winter	2015	H 220 Introduction to Health Data Analysis	72

C. SCHOLARSHIP

*Student or mentee

Refereed Publications

1. Alley ZM*, Kerr DCR, **Bae H**. Trends in college students' alcohol, nicotine, prescription opioid and other drug use after recreational marijuana legalization: 2008-2018. Addictive Behaviors. Submitted.

2. **Bae H**, Kerr DCR. Effect of recreational marijuana legalization on the US undergraduates' marijuana use rates: Analysis of repeated cross-sectional data from 2008 to 2018. Addiction. Submitted.

3. Kerr DCR, **Bae H**, Alley ZM. Enhancing gender and ethnic representativeness of NCHA-II data with survey weights: The examples of substance use prevalence and marijuana legalization. Journal of American College Health. Submitted.

4. **Bae H**, Lunetta KL, Murabito JM, Andersen SL, Schupf N, Perls TT, Sebastiani P, Long Life Family Study. Genetic Association with Age of Menopause in Familial Longevity. Menopause. 2019 Jun 10 (Epub ahead of print).

5. Koval AL*, Kerr DCR, **Bae H**. Perceived prevalence of peer marijuana use: changes among college students before and after Oregon recreational marijuana legalization. The American Journal of Drug and Alcohol Abuse. 2019 Apr 16;45(4):392-399.

6. Gurinovich A, **Bae H**, Farrell JJ, Andersen SL, Monti S, Puca A, Atzmon G, Barzilai N, Perls TT, Sebastiani P. PopCluster: an algorithm to identify genetic variants with ethnicity-dependent effects. Bioinformatics. 2019 Jan 8 (Epub ahead of print).

7. Sebastiani P, Gurinovich A, Nygaard M, Sasaki T, Sweigart B, **Bae H**, Andersen SL, Villa F, Atzmon G, Christensen K, Arai Y, Barzilai N, Puca A, Christiansen L, Hirose N, Perls TT. APOE Alleles and Extreme Human Longevity. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences. 2019 Jan 1;74(1):44-51.

8. **Bae H**, Gurinovich A, Malovini A, Atzmon G, Andersen SL, Villa F, Barzilai N, Puca A, Perls TT, Sebastiani P. Effects of FOXO3 polymorphisms on survival to extreme longevity in four centenarian studies. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences. 2018 Oct 8;73(11):1439-1447.

9. Kerr DCR, **Bae H**, Koval AL*. Oregon recreational marijuana legalization: Changes in undergraduates' marijuana use rates from 2008 to 2016. Psychology of Addictive Behaviors. 2018 Sep;32(6):670-678.

10. Sebastiani P, Gurinovich A, **Bae H**, Andersen SL, Perls TT. Assortative Mating by Ethnicity in Longevous Families. Frontiers in Genetics. 2017 Nov 21;8:186.

11. Kerr DCR, **Bae H**. Phibbs S. Kern AC. Changes in undergraduates' marijuana, heavy alcohol, and cigarette use following Oregon legalization of recreational marijuana use: A controlled study. Addiction. 2017 Nov;112(11):1992-2001.

12. Sebastiani P, Gurinovich A, **Bae H**, Andersen S, Malovini A, Atzmon G, Villa F, Kraja AT, Ben-Avraham D, Barzilai N, Puca A, Perls TT. Four Genome-Wide Association Studies Identify New Extreme Longevity Variants. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences. 2017 Oct 12;72(11):1453-1464.

13. Sebastiani P, **Bae H**, Gurinovich A, Soerensen M, Puca A, Perls TT. Limitations and risks of meta-analyses of longevity studies. Mechanisms of Ageing and Development. 2017 Jul;165(Pt B):139-146.

14. Fagan E, Sun F, **Bae H**, Elo I, Andersen SL, Lee J, Christensen K, Thyagarajan B, Sebastiani P, Perls T. Telomere length is longer in women with late maternal age. Menopause. 2017 May;24(5):497-501.

15. Carozza SE, **Bae H**, Meath T, Branscum A, Bovbjerg ML, Langlois PH. Evaluation of maternal health and labor and delivery conditions as risk factors for childhood leukemias in children with Down syndrome. Cancer Epidemiology. 2017 Feb;46:36-41.

16. **Bae H**, Monti S, Montano M, Steinberg MH, Perls TT, Sebastiani P. Learning Bayesian Networks from Correlated Data. Scientific Reports. 2016 May;6:25156.

17. Zeng Y, Nie C, Min JX, Liu XM, Li MM, Chen HS, Xu HS, Wang MB, Ni T, Li Y, Yan H, Zhang JP, Song C, Chi LQ, Wang HM, Dong J, Zheng GY, Lin L, Qian F, Qi YW, Liu X, Cao HZ, Wang YH, Zhang LJ, Li ZC, Zhou YF, Wang Y, Lu JH, Li JX, Qi M, Bolund L, Yashin A, Land KC, Gregory S, Yang Z, Gottschalk W, Tao W, Wang J, Wang J, Xu X, **Bae H**, Nygaard M, Christiansen L, Christensen K, Franceschi C, Lutz MW, Gu J, Tan QH, Perls T, Sebastiani P, Deelen J, Slagboom E, Hauser E, Xu H, Tian XL, Yang HM, Vaupel JW. Novel loci and pathways significantly associated with longevity. Scientific Reports. 2016 Feb 25;6:21243.

18. **Bae H**, Perls T, Steinberg M, Sebastiani P. Bayesian Polynomial Regression Models to Fit Multiple Genetic Models for Quantitative Traits. Bayesian Analysis. 2015 Mar;10:53-74.

19. Sebastiani P, Farrell J, Alsultan A, Wang S, Edward H, Shappell H, **Bae H**, Milton J, Baldwin C, Al-Rubaish A. BCL11A enhancer haplotypes and fetal hemoglobin in sickle cell anemia. Blood Cells, Molecules, and Diseases. 2015 Mar;54:224-30.

20. Stevenson M, **Bae H**, Schupf N, Andersen S, Zhang Q, Perls T, Sebastiani P. Burden of disease variants in participants of the long life family study. Aging (Albany NY). 2015 Feb;7:123-32.

21. Sun F, Sebastiani P, Schupf N, **Bae H**, Andersen SL, McIntosh A, Abel H, Elo IT, Perls TT. Extended maternal age at birth of last child and women's longevity in the Long Life Family Study. Menopause. 2015 Jan;22:26-31.

22. **Bae HT**, Perls TT, Sebastiani P. An efficient technique for Bayesian modeling of family data using the BUGS software. Frontiers in Genetics. 2014 Nov;5:390.

23. Bachman E, Travison TG, Basaria S, Davda MN, Guo W, Li M, Westfall JC, **Bae H**, Gordeuk V, Bhasin S. Testosterone induces erythrocytosis via increased erythropoietin and suppressed hepcidin: evidence for a new erythropoietin/hemoglobin set point. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences. 2014 Jun;69:725-35.

24. Lee JH, Cheng R, Honig LS, Feitosa M, Kammerer CM, Kang MS, Schupf N, Lin SJ, Sanders JL, **Bae H**, Druley T, Perls T, Christensen K, Province M, Mayeux R. Genome wide association and linkage analyses identified three loci-4q25, 17q23.2, and 10q11.21-associated with variation in leukocyte telomere length: the Long Life Family Study. Frontiers in Genetics. 2014 Jan;4:310.

25. Sebastiani P, **Bae H**, Sun FX, Andersen SL, Daw EW, Malovini A, Kojima T, Hirose N, Schupf N, Puca A. Meta-analysis of genetic variants associated with human exceptional longevity. Aging (Albany NY). 2013 Sep;5:653-61.

26. Andersen SL, Sun JX, Sebastiani P, Huntly J, Gass JD, Feldman L, **Bae H**, Christiansen L, Perls TT. Personality factors in the long life family study. The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences. 2013 Sep;68:739-49.

27. Ngo D, **Bae H**, Steinberg MH, Sebastiani P, Solovieff N, Baldwin CT, Melista E, Safaya S, Farrer LA, Al-Suliman AM. Fetal hemoglobin in sickle cell anemia: genetic studies of the Arab-Indian haplotype. Blood Cells, Molecules, and Diseases. 2013 Aug;51:22-6.

28. Alsultan A, Ngo D, **Bae H**, Sebastiani P, Baldwin CT, Melista E, Suliman AM, Albuali WH, Nasserullah Z, Luo Hy. Genetic studies of fetal hemoglobin in the Arab-Indian haplotype sickle cell-β0 thalassemia. American Journal of Hematology. 2013 Jun;88:531-2.

29. **Bae HT**, Sebastiani P, Sun JX, Andersen SL, Daw EW, Terracciano A, Ferrucci L, Perls TT. Genome-wide association study of personality traits in the long life family study. Frontiers in Genetics. 2013 May;4:65.

30. **Bae HT**, Baldwin CT, Sebastiani P, Telen MJ, Ashley-Koch A, Garrett M, Hooper WC, Bean CJ, DeBaun MR, Arking DE. Meta-analysis of 2040 sickle cell anemia patients: BCL11A and HBS1L-MYB are the major modifiers of HbF in African Americans. Blood. 2012 Aug;120(9):1961-2.

31. Cordoba G, Schwartz L, Woloshin S, **Bae H**, Gøtzsche PC. Definition, reporting, and interpretation of composite outcomes in clinical trials: systematic review. BMJ. 2010 Aug;341:c3920.

32. Chatterjee A, Chen L, Goldenberg EA, **Bae HT**, Finlayson SR. Opportunity cost in the evaluation of surgical innovations: a case study of laparoscopic versus open colectomy. Surgical Endoscopy. 2010 May;24(5):1075-9.

Book Chapter

Sebastiani P, Gurinovich A, **Bae H**, Perls TT. "Genetic Markers of Extreme Human Longevity." *Biomarkers of Human Aging*. Ed. Moskalev A. Springer Nature. [Accepted to appear in *Biomarkers of Human Aging*]

Invited Conference Presentations and Seminars

1. 2019 WNAR Annual Meeting (Jun. 23-26, 2019). *Effect of Recreational Marijuana Legalization on the US Undergraduates' marijuana use rates: Analysis of Repeated Cross-sectional Data from 2008 to 2018*. **Bae H**, Kerr DCR.

2. College of Public Health and Human Sciences Research Seminar, Oregon State University (Feb. 24, 2017). *The effect of Oregon legalization of recreational marijuana among undergraduates*. **Bae H**.

3. Center for Genome Research and Biocomputing Spring Conference, Oregon State University (Apr. 11, 2016). *Associations of FOXO3A and Extreme Longevity in Four Centenarian Studies*. **Bae H**.

4. Oregon Public Health Association Conference, Oregon State University (Oct. 12, 2015). *Associations of FOXO3A and Longevity in the Long Life Family Study, New England Centenarian Study, Ashkenazi Jewish Centenarian Study, and Southern Italian Centenarian Study*. **Bae H**.

5. The Joint Statistical Meetings 2015; Seattle, WA (Aug. 8-13, 2015). *Learning Bayesian Networks from Correlated Data*. **Bae H**, Monti S, Montano M, Perls TT, Sebastiani P.

6. College of Public Health and Human Sciences Research Seminar, Oregon State University (Oct. 17, 2014). *Understanding the Genetic Basis of Complex Polygenic Traits*. **Bae H**.

7. American Statistical Association - Oregon Chapter Fall 2014 Meeting, Oregon State University (Oct. 15, 2014). *Bayesian Model Selection for Multiple Genetic Models: Application to GWAS Data*. **Bae H**.

8. American Society of Hematology 53rd Annual Meeting; San Diego, CA (Dec. 10-13, 2011). *An Elevated Tricuspid Regurgitant Jet Velocity in Sickle Cell Disease Is Associated with Polymorphisms in Genes Impacting Innate Immunity*. **Bae H**, Baldwin CT, Gladwin MT, Ashley-Koch AE, Garrett M, Soldano K, Taylor JG, Kato GJ, Telen MJ, Sebastiani P, Steinberg MH, Klings ES.

Presented Abstracts

Bae H, Gurinovich A, Sweigart B, Lunetta K, Murabito J, Andersen S, Perls T, Sebastiani P. Genetic Influence on Age of Menopause in The Long Life Family Study And Health and Retirement Study. Gerontological Society of America 70th Annual Scientific Meeting; Boston, MA (Nov. 14-18, 2018). Poster Presentation.

Bae H, Sun F, Andersen SL, Schupf N, Perls TT, Sebastiani P. Genetic Influence on Age of Menopause in Long-Lived Individuals. The 21st IAGG World Congress of Gerontology & Geriatrics; San Francisco, CA (Jul. 23-27, 2017). Poster Presentation.

Bae H, Sebastiani P, Gurinovich A, Atzmon G, Andersen A, Puca A, Barzilai N, Perls T. Associations of FOXO3A Polymorphisms with Extreme Human Longevity in Four Centenarian Studies. Gerontological Society of America 69th Annual Scientific Meeting; New Orleans, LA (Nov. 16-20, 2016). Poster Presentation.

Wu C*, Odden MC, Ramsey SA, **Bae H**. GWAS of frailty in older Caucasians and African Americans: The health and retirement study. American Society of Human Genetics 66th Annual Meeting; Vancouver, BC, Canada (Oct. 18-22, 2016). Poster Presentation

Bae H, Sebastiani P, Gordeuk VR, Zhang Y, Steinberg MH, Kato GJ. Association of FOXO3A Polymorphisms with Hematocrit, LDH and Longevity in Patients with Sickle Cell Anemia from CSSCD, Walk-Phasst, and PUSH Clinical Trials. American Society of Hematology 57th Annual Meeting; Orlando, FL (Dec. 5-8, 2015). Poster Presentation.

Bae H, Barzilai N, Atzmon G, Perls TT, Sebastiani P. Associations of FOXO3A and Extreme Longevity in the LLFS, NECS, and AJCS. Gerontological Society of America 68th Annual Scientific Meeting; Orlando, FL (Nov. 18-22, 2015). Poster Presentation.

Bae H, Newman A, Sanders J, Perls TT, Sebastiani P. Associations of FOXO3A and Human Lifespan in the Long Life Family Study: A Network Model Approach. Gerontological Society of America 66th Annual Scientific Meeting; New Orleans, LA (Nov. 20-24, 2013). Poster Presentation.

Bae H, Newman A, Sanders J, Perls TT, Sebastiani P. Associations of FOXO3A and human lifespan in the Long Life Family Study. American Society of Human Genetics 63rd Annual Meeting; Boston, MA (October 25, 2013). Poster Presentation

Bae H, Sebastiani P. Polynomial Parameterization of Single Nucleotide Polymorphism In Genetic Association Studies of Quantitative Traits. The 27th New England Statistical Symposium; Storrs, CT (Apr. 27, 2013). Poster Presentation.

Funded Grant Support

1. Funding Agency: Trustees of Boston University, BUMC (Prime Sponsor: National Institutes of Health)
   Project Title: The Longevity Consortium
   Total Amount: $ 266,507 (amount reported is the total subcontract amount)
   PI: Harold Bae
   Dates: 9/01/2018 - 8/31/2023
   Role: Subcontract Principal Investigator

2. Funding Agency: John C. Erkkila M.D. Endowment for HHP
   Project Title: Changes in Oregon Undergraduates' Health Risks after Recreational Marijuana Legalization
   Total Amount: $ 24,725
   PI: David Kerr (College of Liberal Arts, OSU)
   Dates: 6/15/2018 - 6/14/2019
   Role: Co-Investigator

3. Funding Agency: Medical Research Foundation of Oregon
   Project Title: College students' marijuana use and perception of peer use before and after legalization of recreational marijuana use in Oregon
   Total Amount: $ 30,640
   PI: Harold Bae
   Dates: 6/01/2018 - 5/31/2019
   Role: Principal Investigator

4. Funding Agency: The Alpha Foundation
   Project Title: Systematic Evaluation of Multi-axial Suspension to Reduce Whole Body Vibration Exposures in Heavy Equipment Mining Vehicle Operators
   Total Amount: $ 361,407
   PI: Jay Kim (College of Public Health and Human Sciences, OSU)
   Dates: 1/1/2017 – 12/31/2018
   Role: Co-Investigator

5. Funding Agency: National Science Foundation
   Project Title: QuBBD: Mathematical models for a molecular genetic understanding of population variation in risk of cardiovascular disease
   Total Amount: $ 99,579
   PI: Harold Bae and Stephen Ramsey (Carlson College of Veterinary Medicine, OSU)
   Dates: 9/1/2015 – 8/31/2016
   Role: Co-Principal Investigator

6. Funding Agency: OSU / Division of Health Sciences Interdisciplinary Grant
   Project Title: Integrating genetic epidemiology and functional genomics approaches for a detailed understanding of the functions of noncoding variants in CVD
   Total Amount: $ 27,000
   PI: Harold Bae and Stephen Ramsey (Carlson College of Veterinary Medicine, OSU)
   Dates: 7/1/2015 – 6/30/2016
   Role: Co-Principal Investigator

D. SERVICE

University and College Service

2017	electronic Research Administration (eRA) User Advisory Group Committee
2015-present	In-person meetings with faculty candidates in Environmental and Occupational Health (1), Nutrition (2), Complex Systems in the Life and Environmental Sciences (3), Provost Initiative "Student Success" (1)

2019	Poster Judge at 2019 Annual Graduate Student Research Poster Session
2017-present	Member, Committee of online MPH in Public Health Practice
2017-2018	Member, Committee of Development of H 513
2018	Member, Committee of Development of HHS 513/514
2017, 2018	Search Committee, Biostatistics
2015	Search Committee, Health Policy and Management
2015	Recorded a video for CPHHS Graduate Student Orientation
2014-present	Biostatistics Program Meetings
2014-present	Wrote letters of recommendation for 8 graduate students

Service to Profession

Editorial Board
    Associate Editor for Biometrics & Biostatistics International Journal (2014 – present)

Ad Hoc Reviewer for:
    The Social Science Journal (2019)
    PLOS One (2019)
    Annals of Human Genetics (2018)
    Circulation: Genomic and Precision Medicine (2018-2019)
    Journal of Gerontology: Medical Sciences (2017)
    International Journal of Environmental Research and Public Health (2017)
    Statistical Methods in Medical Research (2017)
    Journal of Applied Statistics (2016)
    Experimental Gerontology (2016)
    The American Statistician (2015)
    Hematology (2015)
    Circulation: Cardiovascular Genetics (2014-2018)

Chair, Invited session, Recent Developments in Public Health Biostatistics, WNAR 2019, Portland, OR.

Member, Committee of Student Paper Competition, WNAR 2019, Portland, OR.

Member, Committee of Student Paper Competition, WNAR 2018, Edmonton, AB, Canada.

Member, Regional Advisory Board, WNAR 2018-2020.

Judge, Poster Presentations, Oregon Public Health Association Conference 2016 & 2018.