CURRICULUM VITAE

Timothy A. Thornton, Ph.D.

Updated on December 30, 2013

1. Biographical Information

University of Washington
Department of Biostatistics
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Seattle, WA 98195-7232
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2. Education

Hampton University, Hampton, VA, B.S., Mathematics, 1998
University of Chicago, Chicago, IL, Ph.D., Statistics, 2005

3. Licensure: Not Applicable

4. Professional Positions

Postdoc, Department of Statistics, University of California, Berkeley, 2006-2008
Postdoc, Institute for Human Genetics, University of California, San Francisco, 2008-2009
Assistant Professor, Department of Biostatistics, University of Washington, 2009-present
Faculty Member, Institute for Public Health Genetics, University of Washington 2009-present
Affiliate Investigator, Biostatistics and Biomathematics Program, FHCRC, 2010-present

5. Honors, Awards, Scholarships

Office of Naval Research Student Enhancement in Mathematics and Science Scholarship, 1994-1998
B.A. conferred Magna Cum Laude and with Honors in Mathematics, Salutatorian, Hampton University, 1998
Graduate Degrees for Minorities in Engineering and Science Fellowship, 1998
Office of Naval Research-Historically Black Colleges and Universities Graduate Fellowship, 1998-2002
David and Lucile Packard Foundation Graduate Fellowship, 1998-2004
University of Chicago Graduate Fellowship, 1998-2005
FASEB-MARC Travel Award, 2006
University of California President's Postdoctoral Fellowship, 2006-2008
University of California, San Francisco Lamond Family Postdoctoral Fellowship, 2008-2009

6. Professional Activities (outside of UW)

Co-organizer (with Bruce Weir), "Impact of Large-Scale Genomic Data on Statistical and Quantitative Genetics" Conference, Seattle, WA, November 24-26, 2013

Organizer and Chair, WNAR/IMS Invited session "Advances in Statistical Genetics for Large-Scale Genomic Data," WNAR/IMS Conference, Los Angeles, California, June 16-19, 2013.

Professional Societies:

American Statistical Association
Institute of Mathematical Statistics
American Association for the Advancement of Science
American Society of Human Genetics

Professional Activities:

Review Editor for:

Frontiers in Genetics 2010-present

Women's Health Initiative (WHI):

Ancillary Studies Committee Member, 2012-Present

Referee for:

Annals of Human Genetics
Annals of Applied Statistics
Bioinformatics
Biometrics
BioMed Central Genetics
BioMed Central Proceedings
Biostatistics
Frontiers in Genetics
Genetic Epidemiology (3x in 2013)
Genome Research
Human Heredity
International Journal of Health Geographics
Nature Reviews Genetics
Plos Genetics
Plos One
Statistical Applications in Genetics and Molecular Biology
Statistics in Medicine

7. Bibliography

a) Refereed research articles

1. Anderson-Cook CM and **Thornton T** (1998) "Measuring Hockey's Special Teams Efficiency." *Chance*, 11: 26-34

2. Anderson-Cook CM and **Thornton T** (1998) "Response to Letter to the Editor: Shorthanded." *Chance*, 12: 3-5

3. **Thornton T** and McPeek MS (2007) "Case-Control Association Testing with Related Individuals: A More Powerful Quasi-Likelihood Score Test." *American Journal of Human Genetics* 81: 321-337

4. FitzGerald LM, Patterson B, Thomson R, Polanowski A, Quinn S, Brohede J, **Thornton T**, Challis D, Mackey D, Dwyer T, Foote S, Hannan GN, Stankovich J, McKay JD, Dickinson JL (2009) "Identification of a Prostate Cancer Susceptibility Gene on Chromosome 5p13q12 Associated with Risk of Both Familial and Sporadic Disease." *European Journal of Human Genetics* 17: 368-377

5. **Thornton T** and McPeek MS (2010) "ROADTRIPS: Case-Control Association Testing with Partially or Completely Unknown Population and Pedigree Structure." *American Journal of Human Genetics* 86: 172-184

6. Phasukijwattana N, Kunhapan B, Stankovich J, Chuenkongkaew WL, Thomson R, **Thornton T**, Bahlo M, Mushiroda T, Nakamura Y, Mahasirimongkol S, Tun AW, Srisawat C, Limwongse C, Peerapittayamongkol C, Sura T, Suthammarak W, Lertrit P (2010) "Genome-wide Linkage Scan and Association Study of PARL to the Expression of LHON Families in Thailand." *Human Genetics* 128: 39-49

7. Tore S, Casula S, Casu G, Concas MP, Pistidda P, Persico I, Sassu A, Maestrale GM, Caterina Mele C, Caruso MR, Bonerba B, Usai P, Deiana I, **Thornton T**, Pirastu M, and Forabosco P (2011) "Application of a New Method for GWAS in a Related Case/Control Sample with Known Pedigree Structure: Identification of New Loci for Nephrolithiasis." *PLoS Genetics* 7: e1001281

8. **Thornton T**, Zhang Q, Cai X, Ober C, and McPeek MS (2012) "XM: Association Testing on the X-Chromosome in Case-Control Samples with Related Individuals." *Genetic Epidemiology* 36: 438-450

9. **Thornton T**, Tang H, Hoffman TJ, Ochs-Balcom HM, Caan BJ, and Risch NJ (2012) "Estimating Kinship in Admixed Populations." *American Journal of Human Genetics* 91:122-138

10. Ochs-Balcom HM, Preus L, Wactawski-Wende J, Nie J, Johnson NA, Zakharia F, Tang H, Carlson C, Carty C, Chen Z, Hoffman T, Hutter CM, Jackson RD, Kaplan RC, Li L, Liu S, Neuhouser ML, Peters U, Robbins J, Seldin MF, **Thornton T**, Thompson CL, Kooperberg C, Sucheston LE (2013)"Admixture Mapping of DXA-Derived Phenotypes in WHI SHARe African-Americans." *Journal of Clinical Endocrinology and Metabolism* 98:E713-E717

11. Coram M, Duan Q, Hoffman TJ, **Thornton T**, Knowles J, Johnson NA, Ochs-Balcom HM, Donlon TA, Martin LW, Eaton CB, Robinson JG, Risch NJ, Zhu X, Kooperberg C, Li Y, Reiner AP, Tang H.Caterina Mele C, Caruso MR, Bonerba B, Usai P, Deiana I, **Thornton T**, Pirastu M, and Forabosco P (2013) "Genome-wide Characterization of Shared and Distinct Genetic Components that Influence Blood Lipid Levels in Human Populations" *American Journal of Human Genetics* 92:904-916

12. Fohner A, Muzquiz LI, Austin MA, Gaedigk A, Gordon A, **Thornton T**, Rieder MJ, Pershouse MA, Putnam EA, Howlett K, Beatty P, Thummel KE, Woodahl EL. (2013). "Pharmacogenetics in American Indian Populations: Analysis of CYP2D6, CYP3A4, CYP3A5, and CYP2C9 in the Confederated Salish and Kootenai Tribes." *Pharmacogenetics and Genomics*: 23:403-414

13. Kaklamani VG, Hoffmann TJ, **Thornton T**, Geoffrey G, Chlebowski R, Horn LV6, Mantzoros C (2013) "Adiponectin pathway polymorphisms and risk of breast cancer in African Americans and Hispanics in the Women's Health Initiative." *Breast Cancer Research and Treatment* 139:461-468

14. Perez MV, Hoffmann TJ, Tang H, **Thornton T** , Stefanick ML, Larson JC, Kooperberg K, , PhD, Reiner AP, Caan B, DrPH, Iribarren C, Risch N (2013) "African-American race but not genome-wide African ancestry is negatively associated with atrial fibrillation among postmenopausal women." *American Heart Journal* 166:566-572

15. **Thornton T**, Austin M (2013) "Software and data resources for genetic association studies: Mini Review" *CAB Reviews 8,* 57:1-6

16. **Thornton T** , Bermejo JL (2013) "Local and Global Ancestry Inference and Applications to Genetic Association Analysis for Admixed Populations." *Genetic Epidemiology* (In Press)

17. **Thornton T**, Conomos M, Sverdlov S, Marchani EE, Cheung C, Glazner C, Lewis S, Wijsman EM (2013) "Estimating and Adjusting for Ancestry Admixture in Statistical Methods for Relatedness Inference, Heritability Estimation, and Association Testing." *BMC Proceedings* (In Press)

18. Marchani EE, Cheung CYK, Glazner CG, Conomos MP, Lewis SM, Sverdlov S, **Thornton T**, Wijsman EM (2013) "Identity-by-Descent Graphs Offer a Flexible Framework for Imputation and both Linkage and Association Analyses" *BMC Proceedings* (In Press)

19. Hoffman TJ, Tang H, **Thornton T**, Caan BJ, Millen AE, Thomas F, and Risch NJ "African ancestry is associated with glaucoma in the Women's Health Initiative genome-wide association study." (*S*ubmitted to *Human Molecular Genetics*)

b) Manuscripts in Preparation

1. Conomos M, Miller M, **Thornton T.** "Robust population structure inference in the presence of known or cryptic relatedness"

2. **Thornton T**, Conomos M, Tang H, Hoffman TJ, Caan BJ, Risch NJ, Reiner A, McPeek MS. "Mixed-model genetic association mapping in admixed populations"

3. **Thornton T,** Coggeshall S, Au N, Boyer B, Hopkins S, Austin MA, Thummel K, Rettie A. "Genetic association mapping of non-normal quantitative traits in related samples: identification of the CYP4F2*3 allele as a modifier for subclinical vitamin K deficiency in Alaskan Yup'ik People"

4. McHugh C, **Thornton T.** "Ancestry differences on the X chromosome and the autosomes in Mexican Americans: analysis of the HapMap MXL"

5. **Thornton T**, Hoffman TJ, Garcia M, Tang H, Caan BJ, Risch NJ. "Replication of genomic loci influencing height in postmenopausal Hispanic women from the Women's Health Initiative"

c) Other refereed scholarly publications (proceedings, policy papers and reviews, book chapters)

1. Anderson-Cook CM, **Thornton, T**, Robles, R (1997), "Measuring Hockey Powerplay and Penalty Killing Efficiency", *Proceedings of the American Statistical Association Section on Statistics in Sports*, Alexandria, VA: American Statistical Association, 11-14.

d) Books and book chapters

1. **Thornton T:** "Software and Data Resources for Genetic Epidemiology Studies," **In**: Genetic Epidemiology: Methods and Applications (authors: Austin MA, Beaty TH, Dotson WD, Edwards K, Fullerton SM, Gwinn M, Khoury M, Mcknight B, Ottman R, Psaty B, Schwartz SM, Stanford J, Thornton T). Wallingford, Oxfordshire, UK: CAB International Publishing, 2013.

e) Other non-refereed published scholarly publications

None Indicated

8. Patents and Other Intellectual Property

Publically Available Software

1. **Thornton T**, McPeek M (2007) MQLS – software for case-control genetic association testing in samples that contain related individuals with known pedigrees, available at http://galton.uchicago.edu/~mcpeek/software/MQLS/index.html

2. **Thornton T**, McPeek M (2010) ROADTRIPS - software for case-control genetic association testing in samples with partially or completely unknown population and pedigree structure, available at http://galton.uchicago.edu/~mcpeek/software/ROADTRIPS/index.html

3. **Thornton T** (2012) REAP - software for estimating autosomal kinship coefficients and identity-by-descent (IBD) sharing probabilities using SNP genotype data in samples with admixed ancestry, available at http://faculty.washington.edu/tathornt/software/REAP/index.html

4. **Thornton T**, McPeek M (2012) MQLS-XM – software for performing single-SNP, case-control association testing for the autosomal chromosomes and the X-chromosome in samples with known relatedness, available at http://galton.uchicago.edu/~mcpeek/software/MQLX_XM/index.html

5. **Thornton T**, McPeek (2012) FORMAT_PED_PHENO – software that takes as input a pedigree/phenotype information file and outputs formatted files that are compatible with a number of software packages including MQLS-XM, ROADTRIPS, KinInbcoef, KinInbcoefX, available at http://galton.uchicago.edu/~mcpeek/software/FORMAT_PED_PHENO/index.html

9. Funding History

Current

- K01 CA148958 (Thornton) "Statistical methods for cancer genetic association studies with hidden population structure", NIH/NCI, 9/1/2010-8/31/2015, Total Direct Costs: $686,755, 50% FTE, Role: PI

- R13 HG007506 (Thornton) "Impact of large-scale genomic data on statistical and quantitative genetics", NIH/NHGRI/NCI, 9/1/2013-8/31/2014, Total Direct Costs: $15,000, 0% FTE, Role: PI

- P01 HG0099568 (Browning/Gibson/Thompson/Thornton/Visscher/Weir) "Statistical and quantitative genetics", NIH/NIGMS, 1/1/2014-8/31/2017, Total Direct Costs: $6,702,065, 25% FTE, Role: PI of one of the 6 component projects (Supplement for project awarded 12/2013)

- HHSN268201300005 (Weir) "Omics in Latinos (Ola) - Genetic Analysis", NIH/NHLBI, 3/18/2013-9/17/2015, Total Direct Costs: $4,283,887, 5% FTE, Role: Investigator

Completed

- N01 WH-2-2110 (Risch/Thornton) "Women's Health Initiative SNP Health Association Resource Analytic Center (SHARe Analytic Centers)", NIH/NHLBI with subcontract from UCSF, 8/1/2009-3/31/2011, Total Direct Costs: $45,131, 20% FTE, Role: Principal Investigator of subcontract

- CA15704 (Thornton) "Cancer Center Support Grant", NIH/NCI subcontract from FHCRC, 7/1/2009-6/30/2012, Total Direct Costs: $100,000, 0% FTE, Role: Principal Investigator of subcontract

10. Public Health Practice Activities

None Indicated

11. Conferences and Symposiums

Invited Oral Presentations and Seminars

Department of Preventive Medicine & Epidemiology, Loyola University, Sep 2005
Division of Biostatistics, Mayo Clinic, Dec 2005
Department of Statistics, University of Chicago, Dec 2005
Department of Statistics, North Carolina State University, Apr 2006
Walter and Eliza Hall Institute of Medicine, Melbourne, Australia, Nov 2006
Department of Statistics, University of California, Irvine, Jan 2007
Department of Mathematics, Tulane University, Sep 2007
Walter and Eliza Hall Institute of Medicine, Melbourne, Australia, Oct 2007
Joint Mathematics Meetings, Jan 2008
Department of Statistics, University of California, Riverside, Feb 2008
Department of Statistics, University of California, Berkeley, Feb 2008
Department of Biostatistics, University of Washington, Apr 2008
Menzies Research Institute, Hobart, Tasmania, Australia, Jun 2008
Walter and Eliza Hall Institute of Medicine, Melbourne, Australia, Jun 2008
Blackwell-Tapia Conference, Statistical and Applied Mathematical Sciences Institute, Nov 2008
School of Industrial & Systems Engineering, Georgia Institute of Technology, Dec 2008
Fred Hutchinson Cancer Research Center, Oct 2009
Northwest Institute of Genetic Medicine, University of Washington, Jun 2010
Institute for Public Health Genetics, University of Washington, Nov 2010
Joint Statistical Meetings, Aug 2011
Northwest/Alaska Pharmacogenomics Research Network Conference, Aug 2011
Department of Biostatistics, University of Pennsylvania, April 2012
Northwest/Alaska Pharmacogenomics Research Network All-Investigator Meeting, University of Montana, July 2012
Joint Statistical Meetings, Aug 2012
Society for Advancements of Chicanos and Native Americans in Science (SACNAS) National Conference, Oct 2012
Department of Biostatistics, Yale University, May 2013
WNAR/IMS Conference, June 2013

12. University Service

University of Washington

Royalty Research Fund, Research Proposal Reviewer, 2011
Grayston-Day Fellowship, Selection Committee Member, 2013

Departmental of Biostatistics, University of Washington

Alumni Relations Committee, 2009-2010, 2011-2012, 2012-2013
Seminar Committee, 2009-2010
Applied Exam Grader, 2009-2010
Applied Exam Committee, 2010-2011, 2011-2012, 2012-2013
Emergency Preparedness Committee, 2010-2011 (Chair), 2012-2013
Affiliate/Adjunct Appointments Committee, 2011-2012, 2012-2013, 2013-2014 (Chair)

13. Professionally-Related Community Service

Medical Research Council

Research Grant Proposal Reviewer, 2010

Icelandic Research Fund

Research Grant Proposal Reviewer, 2012

14. Other Pertinent Information As Needed

None Indicated

15. Teaching History (100% responsibility unless otherwise noted)

a) Formal Teaching

University of Chicago:

Statistics 200, Introductory Statistics, Fall 1999
Statistics 200, Introductory Statistics, Spring 2000

University of California, Berkeley:

Statistics 20, Introduction to Probability and Statistics, Summer 2006
Statistics 20, Introduction to Probability and Statistics, Summer 2007

University of Washington:

Biostatistics 516, Statistical Methods in Genetic Epidemiology, Fall 2009
Biostatistics 516, Statistical Methods in Genetic Epidemiology, Fall 2010
Biostatistics 516, Statistical Methods in Genetic Epidemiology, Fall 2011
Biostatistics 551, Statistical Genetics II: Quantitative Genetics, Fall 2012
Biostatistics 581, Statistical Genetics Seminar, Winter 2013
Biostatistics 551, Statistical Genetics II: Quantitative Genetics, Fall 2013

b) Other Teaching

Summer Institute in Statistical Genetics, Seattle, WA, Co-Instructor:

Population Genetics: Theory and Methods, Summer 2009
Population Genetics: Theory and Methods, Summer 2010
Population Genetics: Theory and Methods, Summer 2011
Population Genetics and Association Mapping, Summer 2012
Population Genetics and Association Mapping, Summer 2013
Introduction to R, Summer 2013

University of Washington, Guest Lecturer:

Epidemiology 517, Genetic Epidemiology, Spring 2011
Epidemiology 517, Genetic Epidemiology, Spring 2012
Biostatistics 516, Statistical Methods in Genetic, Fall 2012
Epidemiology 517, Genetic Epidemiology, Spring 2013
Biostatistics 111, Lectures in Applied Statistics, Spring 2013

c) Independent Study

Matthew Conomos, Biostatistics PhD student, Fall 2011-present
Lisa Brown, Biostatistics PhD student, Fall 2013-present
Laurel Steinmetz, Genetic Epidemiology MS student, Winter 2012-Winter 2013

16. Advising and Formal Mentoring

a) PhD Dissertations, Chair

Matthew Conomos (co-chair with Bruce Weir), Biostatistics PhD student, 2012-present

b) Masters Theses, Chair

Mingdong Liu, Biostatistics MS student, 2013-present
Laurel Steinmetz, Genetic Epidemiology MS student, Completed 2013

c) Postdoctoral Fellows (Mentor)

Shizhen Wang, Biostatistics postdoc, 2010-2011

d) MS and PhD Committees in Non Chair Role

MS
Saee Hamine, Genetic Epidemiology MS student, Completed 2009
Nora Kozloff, Genetic Epidemiology MS student, Completed 2010
Nicholas Mosely, Genetic Epidemiology MS student, Completed 2011
Sukh Makhnoon, Genetic Epidemiology MS student, 2013-present

PhD
Rora Rohlfs, Genome Sciences PhD student, Completed 2010
Elizabeth Dorfman, Public Health Genetics PhD student, 2012-present
Elizabeth Hom, Epidemiology PhD student, 2012-present
Ursula Schick, Public Health Genetics PhD student, 2013-present

e) Research Assistants Supervised

Mike Garcia, Biostatistics MS student, Fall 2011-Summer 2012
Scott Coggeshall, Biostatistics PhD student, Fall 2012-Summer 2013
Brayan Ortiz, Biostatistics PhD student, Fall 2013-present

f) Academic Advising

Lisa Brown, University of Washington, Department of Biostatistics, 2010-present
Jean Morrison, University of Washington, Department of Biostatistics, 2011-present
Yingying Zhuang, University of Washington, Department of Biostatistics, 2012-present
Anna Tuck, University of Washington, Department of Biostatistics, 2013-present