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Education

Ph.D. University of Pittsburgh, PA, Graduate School of Public Health, Department of Human Genetics, 1992.

M.S. University of Pittsburgh, PA, Graduate School of Public Health, Program in Genetic Counseling, 1988.

B.S. Cornell University, NY, Concentration in Genetics, 1986.

Honors and Awards

1993 Outstanding Student Award, University of Pittsburgh

1990 Honored by the Cystic Fibrosis Foundation (for collaboration toward the identification of the CFTR gene)

Employment History

2014-ongoing Head, Computational Genetics program in the Human Genetics Institute of New Jersey

2009-ongoing *Associate Professor with tenure*, Department of Genetics, Rutgers University, NJ

2002-2009 *Associate Professor*, Department of Genetics, Rutgers University, NJ

2000-2002 *Associate Research Professor*, Department of Genetics, Rutgers University, NJ

1997-2000 *Assistant Professor*, Laboratory of Statistical Genetics, Rockefeller University, NY. Laboratory Head: Dr. Jurg Ott.

1996-1997 *Postdoctoral Fellow*, Laboratory of Statistical Genetics, Rockefeller University, NY. Laboratory Head: Dr. Jurg Ott.

1994-1996 *Postdoctoral Fellow*, Department of Psychiatry Statistical Genetics Group, Columbia University, NY, Advisor, Dr. Jurg Ott.

1993-1994 *Postdoctoral Fellow*, W.M. Keck Center for Advanced Training in Computational Biology, University of Pittsburgh, Carnegie Mellon University, Pittsburgh Supercomputing Center, PA. Advisor: Dr. Daniel Weeks.

1992-1993 *Postdoctoral Fellow*, Department of Human Genetic, Graduate School of Public Health, University of Pittsburgh, PA, Advisor: Dr. Daniel Weeks.

1986-1992 *Graduate Research Assistant*, Department of Human Genetics, Graduate School of Public Health, University of Pittsburgh, PA, Advisor: Dr. Aravinda Chakravarti.

1983-1986 *Teaching Assistant*, Fortran and Pascal, Department of Agricultural Engineering, Cornell University, NY.

Publications

Works in Progress

1. Li B, Matteson PG, Ababon MF, Nato, AQ, Lin Y, Nanda V, **Matise TC**, and Millonig J; The orphan GPCR, Gpr161, regulates the retinoic acid and canonical Wnt pathways during neurulation; **Under review at** Developmental Biology.
2. Nato AQ, Li B, Chen F, Scerbo M, **Matise TC**, Millonig JH. A bioinformatics approach to identify candidate genes for developmental QTL. (in preparation)
3. Nato AQ, Buyske S, **Matise TC**. Third generation combined physical-linkage maps of the human genome. (in preparation)
4. Buyske S, Vahi K, Deelman E, Peters U, **Matise, TC**. Conducting Large-Scale Imputation Studies on the Cloud. (in preparation)

Chapters in Books or Monographs

5. White PS, **Matise TC.** 2004. Mapping Databases. In: Baxevanis A, Ouellette B eds. Bioinformatics: a practical guide to the analysis of genes and proteins, 3rd edition. John Wiley & Sons, New York, New York, pp. 25-54
6. White PS, **Matise TC.** 2002 Chromosome 1. In: Cooper D ed. Encyclopedia of the Human Genome. Nature Publishing Group, London, England.
7. White PS, **Matise TC.** 2001 Genomic Mapping and Mapping Databases. In: Baxevanis A, Ouellette B eds. Bioinformatics: a practical guide to the analysis of genes and proteins, 2nd edition. John Wiley & Sons, New York, New York.
8. **Matise** TC, White PS. 2001 Chromosome 1. In: Creighton T ed. Encyclopedia of Molecular Medicine. John Wiley & Sons, New York, New York, Vol. 2, pp. 782-784.
9. **Matise T**, Wasmuth J, Myers R, McPherson J. 1999 Somatic cell genetics and radiation hybrid mapping. In: Birren B, Green E, Hieter P, Klapholz S, Myers R eds Genome Analysis: A Laboratory Manual, Vol. 4, Mapping Genomes pp. 259-302. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
10. **Matise TC**, Chakravarti A . 1997 Automated Map Construction. In: Spurr N, Young B, Bryant S eds ICRF Handbook of Genome Analysis. Blackwell Science Ltd, Oxford, pp 89-96.

Articles in Refereed Journals

11. Lim, U., Kocarnik, J.M., Bush, W.S., **Matise, T.C.**, Caberto, C., Park, S.L., Carlson, C.S., Deelman, E., Duggan, D., Fesinmeyer, M., Haiman, C.A., Henderson, B.E., Hindorff, L.A., Kolonel, L.N., Peters, U., Stram, D.O., Tiirikainen, M., Wilkens, L.R., Wu, C., Kooperberg, C., and Le Marchand, L. (2014). Pleiotropy of Cancer Susceptibility Variants on the Risk of Non-Hodgkin Lymphoma: The PAGE Consortium. PLoS One *9*, e89791. 3943855
12. Zhang, L., Spencer, K.L., Voruganti, V.S., Jorgensen, N.W., Fornage, M., Best, L.G., Brown-Gentry, K.D., Cole, S.A., Crawford, D.C., Deelman, E., Franceschini, N., Gaffo, A.L., Glenn, K.R., Heiss, G., Jenny, N.S., Kottgen, A., Li, Q., Liu, K., **Matise, T.C.**, North, K.E., Umans, J.G., and Kao, W.H. (2013a). Association of Functional Polymorphism rs2231142 (Q141K) in the ABCG2 Gene With Serum Uric Acid and Gout in 4 US Populations: The PAGE Study. American Journal of Epidemiol. *177*:923-32.
13. Zhang, L., Buzkova, P., Wassel, C.L., Roman, M.J., North, K.E., Crawford, D.C., Boston, J., Brown-Gentry, K.D., Cole, S.A., Deelman, E., Goodloe, R., Wilson, S., Heiss, G., Jenny, N.S., Jorgensen, N.W., **Matise, T.C.**, McClellan, B.E., Jr., Nato, A.Q., Jr., Ritchie, M.D., Franceschini, N., and Kao, W.H. (2013b). Lack of associations of ten candidate coronary heart disease risk genetic variants and subclinical atherosclerosis in four US populations: the Population Architecture using Genomics and Epidemiology (PAGE) study. Atherosclerosis *228*, 390-399. 3717342
14. Wu, Y., Waite, L.L., Jackson, A.U., Sheu, W.H., Buyske, S., Absher, D., Arnett, D.K., Boerwinkle, E., Bonnycastle, L.L., Carty, C.L., Cheng, I., Cochran, B., Croteau-Chonka, D.C., Dumitrescu, L., Eaton, C.B., Franceschini, N., Guo, X., Henderson, B.E., Hindorff, L.A., Kim, E., Kinnunen, L., Komulainen, P., Lee, W.J., Le Marchand, L., Lin, Y., Lindstrom, J., Lingaas-Holmen, O., Mitchell, S.L., Narisu, N., Robinson, J.G., Schumacher, F., Stancakova, A., Sundvall, J., Sung, Y.J., Swift, A.J., Wang, W.C., Wilkens, L., Wilsgaard, T., Young, A.M., Adair, L.S., Ballantyne, C.M., Buzkova, P., Chakravarti, A., Collins, F.S., Duggan, D., Feranil, A.B., Ho, L.T., Hung, Y.J., Hunt, S.C., Hveem, K., Juang, J.M., Kesaniemi, A.Y., Kuusisto, J., Laakso, M., Lakka, T.A., Lee, I.T., Leppert, M.F., **Matise, T.C.**, Moilanen, L., Njolstad, I., Peters, U., Quertermous, T., Rauramaa, R., Rotter, J.I., Saramies, J., Tuomilehto, J., Uusitupa, M., Wang, T.D., Boehnke, M., Haiman, C.A., Chen, Y.D., Kooperberg, C., Assimes, T.L., Crawford, D.C., Hsiung, C.A., North, K.E., and Mohlke, K.L. (2013). Trans-ethnic fine-mapping of lipid loci identifies population-specific signals and allelic heterogeneity that increases the trait variance explained. PLoS Genet *9*, e1003379. 3605054
15. Spencer, K.L., Malinowski, J., Carty, C.L., Franceschini, N., Fernandez-Rhodes, L., Young, A., Cheng, I., Ritchie, M.D., Haiman, C.A., Wilkens, L., Chunyuanwu, **Matise, T.C.**, Carlson, C.S., Brennan, K., Park, A., Rajkovic, A., Hindorff, L.A., Buyske, S., and Crawford, D.C. (2013). Genetic variation and reproductive timing: African American women from the Population Architecture using Genomics and Epidemiology (PAGE) Study. PLoS One *8*, e55258. 3570525
16. Peters, U., North, K.E., Sethupathy, P., Buyske, S., Haessler, J., Jiao, S., Fesinmeyer, M.D., Jackson, R.D., Kuller, L.H., Rajkovic, A., Lim, U., Cheng, I., Schumacher, F., Wilkens, L., Li, R., Monda, K., Ehret, G., Nguyen, K.D., Cooper, R., Lewis, C.E., Leppert, M., Irvin, M.R., Gu, C.C., Houston, D., Buzkova, P., Ritchie, M., **Matise, T.C.**, Le Marchand, L., Hindorff, L.A., Crawford, D.C., Haiman, C.A., and Kooperberg, C. (2013). A systematic mapping approach of 16q12.2/FTO and BMI in more than 20,000 African Americans narrows in on the underlying functional variation: results from the Population Architecture using Genomics and Epidemiology (PAGE) study. PLoS Genet *9*, e1003171. 3547789
17. Pendergrass, S.A., Brown-Gentry, K., Dudek, S., Frase, A., Torstenson, E.S., Goodloe, R., Ambite, J.L., Avery, C.L., Buyske, S., Buzkova, P., Deelman, E., Fesinmeyer, M.D., Haiman, C.A., Heiss, G., Hindorff, L.A., Hsu, C.N., Jackson, R.D., Kooperberg, C., Le Marchand, L., Lin, Y., **Matise, T.C.**, Monroe, K.R., Moreland, L., Park, S.L., Reiner, A., Wallace, R., Wilkens, L.R., Crawford, D.C., and Ritchie, M.D. (2013). Phenome-wide association study (PheWAS) for detection of pleiotropy within the Population Architecture using Genomics and Epidemiology (PAGE) Network. PLoS Genet *9*, e1003087. 3561060
18. Londono, D., Chen, K.M., Musolf, A., Wang, R., Shen, T., Brandon, J., Herring, J.A., Wise, C.A., Zou, H., Jin, M., Yu, L., Finch, S.J., **Matise, T.C.**, and Gordon, D. (2013). A novel method for analyzing genetic association with longitudinal phenotypes. Stat Appl Genet Mol Biol *12*, 241-261.
19. Graff, M., Gordon-Larsen, P., Lim, U., Fowke, J.H., Love, S.A., Fesinmeyer, M., Wilkens, L.R., Vertilus, S., Ritchie, M.D., Prentice, R.L., Pankow, J., Monroe, K., Manson, J.E., Le Marchand, L., Kuller, L.H., Kolonel, L.N., Hong, C.P., Henderson, B.E., Haessler, J., Gross, M.D., Goodloe, R., Franceschini, N., Carlson, C.S., Buyske, S., Buzkova, P., Hindorff, L.A., **Matise, T.C.**, Crawford, D.C., Haiman, C.A., Peters, U., and North, K.E. (2013). The influence of obesity-related single nucleotide polymorphisms on BMI across the life course: the PAGE study. Diabetes *62*, 1763-1767. 3636619

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21. Fesinmeyer, M.D., North, K.E., Ritchie, M.D., Lim, U., Franceschini, N., Wilkens, L.R., Gross, M.D., Buzkova, P., Glenn, K., Quibrera, P.M., Fernandez-Rhodes, L., Li, Q., Fowke, J.H., Li, R., Carlson, C.S., Prentice, R.L., Kuller, L.H., Manson, J.E., **Matise, T.C.**, Cole, S.A., Chen, C.T., Howard, B.V., Kolonel, L.N., Henderson, B.E., Monroe, K.R., Crawford, D.C., Hindorff, L.A., Buyske, S., Haiman, C.A., Le Marchand, L., and Peters, U. (2013a). Genetic risk factors for BMI and obesity in an ethnically diverse population: results from the population architecture using genomics and epidemiology (PAGE) study. Obesity *21*, 835-846. 3482415

22. Fesinmeyer, M.D., North, K.E., Lim, U., Buzkova, P., Crawford, D.C., Haessler, J., Gross, M.D., Fowke, J.H., Goodloe, R., Love, S.A., Graff, M., Carlson, C.S., Kuller, L.H., **Matise, T.C.**, Hong, C.P., Henderson, B.E., Allen, M., Rohde, R.R., Mayo, P., Schnetz-Boutaud, N., Monroe, K.R., Ritchie, M.D., Prentice, R.L., Kolonel, L.N., Manson, J.E., Pankow, J., Hindorff, L.A., Franceschini, N., Wilkens, L.R., Haiman, C.A., Le Marchand, L., and Peters, U. (2013b). Effects of smoking on the genetic risk of obesity: the population architecture using genomics and epidemiology study. BMC Med Genet *14*, 6. 3564691

23. Duan, Q., Liu, E.Y., Auer, P.L., Zhang, G., Lange, E.M., Jun, G., Bizon, C., Jiao, S., Buyske, S., Franceschini, N., Carlson, C.S., Hsu, L., Reiner, A.P., Peters, U., Haessler, J., Curtis, K., Wassel, C.L., Robinson, J.G., Martin, L.W., Haiman, C.A., Le Marchand, L., **Matise, T.C.**, Hindorff, L.A., Crawford, D.C., Assimes, T.L., Kang, H.M., Heiss, G., Jackson, R.D., Kooperberg, C., Wilson, J.G., Abecasis, G.R., North, K.E., Nickerson, D.A., Lange, L.A., and Li, Y. (2013). Imputation of coding variants in African Americans: better performance using data from the exome sequencing project. Bioinformatics *29*, 2744-2749. 3799474

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25. Carlson, C.S., **Matise, T.C.**, North, K.E., Haiman, C.A., Fesinmeyer, M.D., Buyske, S., Schumacher, F.R., Peters, U., Franceschini, N., Ritchie, M.D., Duggan, D.J., Spencer, K.L., Dumitrescu, L., Eaton, C.B., Thomas, F., Young, A., Carty, C., Heiss, G., Le Marchand, L., Crawford, D.C., Hindorff, L.A., Kooperberg, C.L., and Consortium, P. (2013). Generalization and dilution of association results from European GWAS in populations of non-European ancestry: the PAGE study. PLoS Biology *11*, e1001661. 3775722

26. Liu, E.Y., Buyske, S., Aragaki, A.K., Peters, U., Boerwinkle, E., Carlson, C., Carty, C., Crawford, D.C., Haessler, J., Hindorff, L.A., Marchand, L.L., Manolio, T.A., **Matise, T.**, Wang, W., Kooperberg, C., North, K.E., and Li, Y. (2012). Genotype imputation of Metabochip SNPs using a study-specific reference panel of ~4,000 haplotypes in African Americans from the Women's Health Initiative. Genet Epidemiol *36*, 107-117. 3410659

27. Kim, W., Londono, D., Zhou, L., Xing, J., Nato, A.Q., Musolf, A., **Matise, T.C.**, Finch, S.J., and Gordon, D. (2012). Single-variant and multi-variant trend tests for genetic association with next-generation sequencing that are robust to sequencing error. Hum Hered *74*, 172-183. 3863939

28. Carty, C.L., Buzkova, P., Fornage, M., Franceschini, N., Cole, S., Heiss, G., Hindorff, L.A., Howard, B.V., Mann, S., Martin, L.W., Zhang, Y., **Matise, T.C.**, Prentice, R., Reiner, A.P., and Kooperberg, C. (2012). Associations between incident ischemic stroke events and stroke and cardiovascular disease-related genome-wide association studies single nucleotide polymorphisms in the Population Architecture Using Genomics and Epidemiology study. Circ Cardiovasc Genet *5*, 210-216. 3402178

29. Buyske, S., Wu, Y., Carty, C.L., Cheng, I., Assimes, T.L., Dumitrescu, L., Hindorff, L.A., Mitchell, S., Ambite, J.L., Boerwinkle, E., Buzkova, P., Carlson, C.S., Cochran, B., Duggan, D., Eaton, C.B., Fesinmeyer, M.D., Franceschini, N., Haessler, J., Jenny, N., Kang, H.M., Kooperberg, C., Lin, Y., Le Marchand, L., **Matise, T.C.**, Robinson, J.G., Rodriguez, C., Schumacher, F.R., Voight, B.F., Young, A., Manolio, T.A., Mohlke, K.L., Haiman, C.A., Peters, U., Crawford, D.C., and North, K.E. (2012). Evaluation of the metabochip genotyping array in African Americans and implications for fine mapping of GWAS-identified loci: the PAGE study. PLoS One *7*, e35651. 3335090

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92. Avramopoulos, D., **Cox, T.**, Blaschak, J.E., Chakravarti, A., and Antonarakis, S.E. (1992b). Linkage mapping of the AML1 gene on human chromosome 21 using a DNA polymorphism in the 3' untranslated region. Genomics *14*, 506-507.
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Reviews

94. Clark, A.G., Wang, X., and **Matise, T.** (2010). Contrasting methods of quantifying fine structure of human recombination. Annual review of genomics and human genetics *11*, 45-64. 2980829

Published Conference Proceedings

95. White, P.S., Forus, A., **Matise, T.C.**, Schutte, B.C., Spieker, N., Stanier, P., Vance, J.M., and Gregory, S.G. (1999b). Report of the fifth international workshop on human chromosome 1 mapping 1999. Cytogenet Cell Genet *87*, 143-171.
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98. Warburton, D., Shaw, S.H., **Matise, T.C.**, Kalachikov, S., and Fischer, S. (1996). Report and abstracts of the Third International Workshop on Human Chromosome 13 Mapping. Cytogenet Cell Genet *75*, 85-110.
99. Dracopoli, N.C., Bruns, G.A., Brodeur, G.M., Landes, G.M., **Matise, T.C.**, Seldin, M.F., Vance, J.M., and Weith, A. (1994). Report and abstracts of the First International Workshop on Human Chromosome 1 Mapping 1994. Bethesda, Maryland, March 25-27, 1994. Cytogenet Cell Genet *67*, 144-165.

Conference Presentations

Invited Addresses

2013 Mid-Atlantic Genetic Epidemiology and Statistics (MAGES) Conference, Philadelphia, PA, Presentation. The Next PAGE: Examples from the Population Architecture using Genomics and Epidemiology Study.

Papers, Abstracts, and Lectures

2013 ASHG, Boston MA, Conducting Large-Scale Imputation Studies on the Cloud.

2013 ASHG, Boston, MA. Slicing the Genome: A New Approach to Association in Complex, Longitudinal Diseases.

2012 ASHG, San Francisco, CA, Poster. A bioinformatics approach for the identification of developmental QTL candidate genes.

2012 ASHG, San Francisco, CA, Poster. Curating genomic epidemiology data in The PAGE Study.

2011 ASHG, Montreal CA, Poster. Mapping Genes for Longitudinal Data Phenotypes: A Study of Type I Error and Power.

2011 ASHG, Montreal CA, Poster. The Rutgers Map: A third-generation combined linkage-physical map of the human genome.

2011 ASHG, Montreal CA, Poster. Genomic Characterization of Schizophrenia Candidate Gene Regions.

2011 Human Genetics and Genomics Gordon Research Conference, Newport, RI, Poster. Population Architecture using Genomics and Epidemiology: The PAGE Study

2011 Brain Health Institute Inaugural Symposium, Poster. A Multigenic Mouse Mutant Model of Neural Tube Defects (NTDs)

2010 ASHG, Washington, DC, Poster. Phenotype-Wide Association Study (PheWAS) for Detection of Pleiotropy within the Multi-Ethnic Studies of the Population Architecture Using Genomics and Epidemiology (PAGE) Network.

2009 ASHG, Honolulu, HI, Poster. A new PAGE in understanding complex traits: study design for analysis of Population Architecture using Genomics and Epidemiology.

2009 ASHG, Honolulu, HI, Poster. Genomic Characterization of Schizophrenia Candidate Gene Regions.

2008 ASHG, Philadelphia, PA, Poster. Comparison of genome-wide recombination intensity from pedigree/linkage data to population recombination rates estimated from SNP genotype data in the European-American population.

2008 ASHG, Philadelphia, PA, Poster. Is locus heterogeneity or phenotype misclassification more costly for family-based association analysis?

2008 ASHG, Philadelphia, PA, Poster. When a case is not a case.

2008 ASHG, Philadelphia, PA, Poster. A Posterior Probability of Linkage & Association Study of 111 Autism Candidate Genes.

2007 ASHG, San Diego, CA, Poster. Characterization of schizophrenia candidate regions.

2007 Gordon Research Conference, Newport, RI, Presentation. Characterization of schizophrenia candidate regions.

2006 ASHG, New Orleans, LA, Poster. Enhanced linkage maps from family-based genetics studies.

2006 ASHG, New Orleans, LA, Presentation. A second-generation combined linkage-physical map of the human genome.

2004 ASHG, Toronto, Canada, Presentation. Enhanced linkage maps from family-based genetics studies.

2003 ASHG, Los Angeles, CA, Presentation*. A combined linkage-physical map of the human genome.

2002 ASHG, Baltimore, MD, Presentation. A high-resolution SNP linkage map.

2002 Genome Sequencing and Biology Symposium, Cold Spring Harbor, NY., Presentation. A high-resolution SNP linkage map.

2001 ASHG, San Diego, CA, Poster. High-resolution human genome-wide integrated radiation hybrid and linkage maps.

2000 ASHG, Philadelphia, PA, Presentation. Comparison of linkage and rh maps with the sequence of human chromosome 22.

2000 Genome Sequencing and Biology Symposium, Cold Spring Harbor, NY., Poster. Comparison of linkage and RH map positions and distances with physical data from the sequence of human chromosome 22.

1999 ASHG, San Francisco, CA, Poster. MAP-O-MAT: Marker-based linkage mapping on the World Wide Web.

1998 Genome Mapping, Sequencing, and Biology Symposium, Cold Spring Harbor, NY, Presentation. A comprehensive mapping approach: application to human chromosome 1.

1997 ASHG, Baltimore, MD, Poster. Combining radiation hybrid panels to increase mapping power.

1997 Genome Mapping and Sequencing Symposium, Cold Spring Harbor, NY., Poster. Towards an integrated radiation hybrid map of human chromosome 11 with 100 kb resolution.

1997 Chromosome 1 Workshop, Durham, NC, Presentation. Radiation Hybrid Map of Chromosome 1.

1997 PMMB, Santa Fe, NM, Presentation. Radiation Hybrid Mapping.

1996 ASHG, San Francisco, CA, Poster. Radiation hybrids: panels,density, and MultiMap.

1996 Genome Mapping and Sequencing Symposium, Cold Spring Harbor, NY, Presentation. A high resolution RH map of chromosome 11q21-qter: comparison of two whole-genome and one haploid radiation hybrid panels.

1996 ESHG, London, England, Poster. Automated Construction of RH maps using MultiMap.

1995 Map Integration Workshop, Pittsburgh Super-computing Center, PA, Presentation. Synthetic Radiation Hybrids.

1995 Chromsome 13 Workshop, Tarrytown, NY, Presentation. Genetic Map of Chromosome 13.

1995 ASHG, Minneapolis, MN, Presentation. Automated construction of radiation hybrid maps using MultiMap.

1995 Chromosome 1 Workshop, Vienna, Austria, Presentation. Genetic Map of Chromosome 1.

1995 Meeting on Aneuploidy in Germ Cells, Etiologies and Risk Factors, NIEHS, NC., Presentation. Recombination: gender specific, age specific, and relationship to physical map length.

1995 Genome Mapping and Sequencing Symposium, Cold Spring Harbor, NY, Presentation. Automated construction of radiation hybrid maps using MultiMap.

1994 GAW 9, Montreal, Canada, Poster. Genome scanning for complex disease genes using the transmission/disequilibrium test and haplotype-based haplotype relative risk.

1994 ASHG, Montreal, Canada, Poster. Parallel computation of genetic likelihoods using CRI-MAP, PVM, and a network of distributed workstations.

1994 Chromosome 1 Workshop, Bethesda, MD, Presentation. Genetic Map of Chromosome 1.

1993 ASHG, New Orleans, LA, Poster. Detection of tandemly duplicated genetic markers and implications for linkage analysis.

1993 ASHG, New Orleans, LA. Patterns of sex-difference and interference in the human genome.

1993 ASHG, New Orleans, LA, Presentation. Patterns of sex-difference and interference in the human genome.

1993 ISMB, Bethesda, MD, Poster. MultiMap: An expert system for automated genetic linkage mapping.

1993 Genome Mapping and Sequencing Symposium, Cold Spring Harbor, NY, Poster. MultipMap: an expert system for automated genetic linkage map construction by locus content.

1992 ASHG, San Francisco, CA, Presentation. MultiMap: Automatic construction of linkage maps.

1992 GAW 8, Watsonville, CA, Presentation. Detecting heterogeneity with the Affected-Pedigree-Member APM method.

1991 ASHG, Washington, DC, Poster. An expert system computer program for automatic construction of genetic linkage maps.

1991 ASHG, Washington, DC, Presentation. Detection of cystic fibrosis gene carriers: comparison of two screening strategies by simulations.

1989 ASHG, Washington, DC, Presentation. Mapping of the cystic fibrosis gene using putative ancestral recombinants.

1987 ASHG, San Diego, CA, Poster. Phylogenetic relationships between humans and other primates based on albumin/alpha-fetoprotein DNA fragments.

Funding

Externally-Funded Research and/or Training Grants

Pending

12/2014-11/2017 (Grant Amount: $450,000) NIH/NHGRI COGENT-BDA: Computational Genetics Training for Biomedical Big Data Analysis, **Role: PI**. Pending.

12/2014-11/2018 (Grant Amount: $498,811) NIH/NICHD AN:3664454 Association of the Maternal Exome with Risk of an Aneuploid Conception. **Role: Co-I.** Pending.

Active

09/2013-05/2017 (Grant Amount: $720,000) NIH/NHGRI U01 HG007419 PAGE II Coordinating Center, **Role: co-PI (Matise and Buyske are co-PIs)**

06/2013-05/2018 (Grant Amount: $6,373,068) NIH/NIMH U24MH068457, NIMH Center for Collaborative Genetic Studies on Mental Disorders, **Role: Co-I.**

Completed

07/2012-05/2013 (Grant Amount: $113,105) NIH/NHGRI U01 HG004801-04S2 PAGE Coordinating Center Supplement, **Role: PI.**

07/2012-05/2013 (Grant Amount: $490,182) NIH/NHGRI U01 HG004801-04S1 PAGE Coordinating Center Supplement, **Role: PI,** Extension of PAGE CC HG004801 for a 5th year.

09/2009-08/2011 (Grant Amount: $199,432) NIH/NHGRI U01 HG004801-02S1 PAGE Coordinating Center ARRA Supplement, **Role: PI.**

04/2009-04/2012 (Grant Amount: $1,909,623) NIH/NIDA HHSN271200900012C , NIDA Center for Genetics Studies, **Role: Co-I.**

09/2008-09/2010 NARSAD NARSAD, Genomic Characterization of Schizophrenia Candidate Gene Regions, **Role: PI**, 9/15/08-9/14/10, $50,000 ***Not Funded.***

07/2008-06/2012 (Grant Amount: $640,858) NIH/NHGRI U01 HG004801, PAGE (EpiGenVar) Coordinating Center, **Role: PI.**

07/2008-08/2011 (Grant Amount: $1,900,000) NIH/NIDDK HHSN267200800018C, NIDDK Genetics Repository, **Role: Co-I**.

07/2007-06/2012 (Grant Amount: $75,000) NIH/NIGMS R01 GM080221, The Rutgers Mapping Resources, **Role: PI**.

05/2007-04/2010 (Grant Amount: $50,000) NIH/NICHD R03 HD051743, The Genetics of Female Reproductive Aging, **Role: PI.**

05/2004-04/2007 (Grant Amount: $226,812) NIH/NHGRI R01 HG003229-01, Population Genetic Inferences From Dense Genotype Data, **Role: PI of subcontract.**

07/2003-06/2008 (Grant Amount: $4,063,152) NIH/NIMH U24MH068457, NIMH Center for Collaborative Genetic Studies on Mental Disorders, **Role: Co-I**.

07/2003-06/2008 (Grant Amount: $5,697,463) NIH/NIDDK N01-DK-2610, NIDDK Genetics Repository, **Role: Co-I.**

09/2002-08/2005 (Grant Amount: $100,000) NIH/NHLBI 1R01HL071029-01, Enhanced Linkage Maps from Family-based Genetics Studies, **Role: PI**.

06/2002-05/2006 (Grant Amount: $43,267) March of Dimes 12-FY02-108, Genomic Characterization of Schizophrenia Candidate Gene Regions, **Role: PI**.

02/2001-01/2004 (Grant Amount: $191,666) NIH/NIMH R01 MH62440 , Molecular Genetics of a Schizophrenia Locus on 1q21-22, **Role: Co-I.**

05/2000-04/2003 (Grant Amount: $250,000) NIH/NIMH R01 MH60240, Comprehensive Viewing of the Human Genome, **Role: PI of subcontract.**

03/1998-02/2003 (Grant Amount: $80,113) NIH/NHGRI R29-HG01691, Integrated Maps using Radiation Hybrids, **Role: PI**.

03/1996-02/1998 (Grant Amount: $30,000) NIH/NHGRI F32 HG000151-02, Computational Technologies for Gene Mapping, **Role: PI**.

Internally-Funded Research and/or Training Grants

07/2008-06/2010 (Grant Amount: $25,000) Rutgers University Busch Funds, Genomic Characterization of Schizophrenia Candidate Gene Regions, **Role: PI**.

07/2005-05/2007 (Grant Amount: $12,500) Rutgers University Busch Funds-FY 7/1/05-5/1/07 Matise, The Genetics of Female Reproductive Aging, **Role: PI**.

Teaching Activities

Courses Taught at Rutgers

447:481 Topics in Human Genetics, Department of Genetics

2008-present	Course Director
2004-2007	Course director with assistant instructor
2003	Lecturer

447:302 Quantitative Biology and Bioinformatics, Department of Genetics

2014-present	Course Director
2008-2013	Co-instructor of one 3-week session

695:538 Fundamentals of Molecular Biosciences, Graduate Program in Molecular Biosciences

2013	Lecturer for one class, exam

695:539 Experimental Methods In Molecular Biosciences, Graduate Program in Molecular Biosciences

2013	Lecturer for two classes

447:385 Genetic Analysis II, Department of Genetics

2007-2009	Lecturer for one class

447:451 Genomes, Department of Genetics

2006-present	Lecturer for one class

681:502 Microbial and Molecular Genetics, Graduate Program in Molecular Biosciences

2013	Lecturer for one class, exam
2012	Lecturer for two classes, exam
2007	Lecturer for three classes, exam
2006	Lecturer for two classes, exam
2003	Lecturer for two classes, exam
2002	Lecturer for two classes, exam
2001	Lecturer for two classes, exam

148:602 *Topics in Computational Biology, Department of Cell Biology and Neuroscience*

2008	Lecturer for one class, graded 3 term papers

148:530 Human Genetics, Graduate Program in Molecular Biosciences

2005	Lecturer for two classes
2003	Lecturer for one class

447:403 Seminar in Genetics, Department of Genetics

2009	Section Director
2005	Section Director
2001	Section Director

Special Courses Taught

2012, Graduate Course in Reproductive Epidemiology, 1 lecture, University of Pennsylvania
2011, Basic Linkage and Association course, 1 section annually, Rutgers University
2010, Graduate Course in Reproductive Epidemiology, 1 lecture, University of Pennsylvania
2008, Graduate Course in Reproductive Epidemiology, 1 lecture, University of Pennsylvania
2001-2010, Basic Linkage Analysis course, 1 section annually, Rockefeller University
2001-2002, Advanced Linkage Analysis course, 1 section annually, Rockefeller University
2001, Current Applications in Molecular Biology, 1 lecture, University of Pennsylvania
2000, Course on Gene Identification: Bioinformatics, 1 lecture, Cold Spring Harbor Labs

Curricular Development - Courses and Programs Developed

2014 Course Director of Quantitative Biology and Bioinformatics 01:447:302, conducted a major revision of this course in Spring 2014

2012-2014 Member of team to develop a new major in Computational Genetics

2004 Course Director of Topics in Human Genetics 01:447:481, conducted a major revision of this course in the Spring of 2004.

Instructional Development

2014 American Society of Human Genetics Education Workshop, 10/14*.

2008 American Society of Human Genetics Education Workshop, 11/08.

Undergraduate Thesis Committees

2013 David Kornblum (Hirschfield)

2011 Heidi Chen (Brzustowicz)

2008 Marc Lava (Brzustowicz)

2007 Scott Schafler (Brzustowicz)

2006 Sam Tischfield (Roth)

2006 Erin Gorden (Sahota)

Academic Advisement

2013-present, Undergraduate Advisor, Department of Genetics, ~6 students per year

2002-2010, Undergraduate Advisor, Department of Genetics, ~6 students per year

Students Supervised

Students Supervised for Undergraduate Independent Studies

2014 Marielle Jamgochian, Research in Genetics, 6 credits, 2013-2014.

2010 Gregory Coughlin, Advanced Independent Study in Genetics, 6 credits, 2009-2010.

2008 Danielle Chimento, Research in Genetics, 6 credits, 2007-2008.

2004 Nickolay Khazanov, Research in Genetics and Microbiology, 12 credits, 2002-2004.

2003 Lew-Christiane Fernandez, Honors Research in Genetics and Microbiology, 15 credits, 2002-2003.

2002 Victoria Appleton, Research in Genetics and Microbiology, 12 credits, 2001-2002.

Master's or Doctoral Students by Type of Supervision

Doctoral - Primary

2014 Lisheng Zhou, 2012-ongoing

2013 Anthony Musolf, 2010-ongoing

2011 Andrew Nato, 2005-2011. Characterization of Schizophrenia Candidate Regions.

2009 Fang Chen, 2005-2009. A posterior probability of linkage & association study of 111 Autism candidate genes.

2007 Chunsheng He “Enhanced linkage maps from family-based genetics studies.” 2001-2007

Doctoral - Committee

2014 Gillian Silver (Brzustowicz, 2014-ongoing)

2011 Abby Hare (Brzustowicz, PhD)

2011 Madhura Sreenath (Hirschfield, Ph.D. 2011)

2009 Michael Moreau (Brzustowicz, Ph.D. 2009)

2009 Pilar Garavito (Brzustowicz, Ph.D. 2009)

2009 Yong Wang (Hey, Ph.D. 2009)

2008 Viatcheslav Saviouk (Brzustowicz, Ph.D. 2008)

2007 Andrea Maes (Diehl, Ph.D. 2007)

2005 Bin Xu (Brzustowicz, Ph.D. 2005)

Master's - Primary

2008 Guang Yang, 2008-2009.

Master's - Committee

2012 Stephanie Frahm (Brooks, M.S.)

2012 Ray Zimmerman (Brzustowicz, M.S.)

2006 Vicky Pilitsis (Brzustowicz, M.S. 2006)

2004 Johann Melendez (Brzustowicz, M.S. 2004)

2003 Anbing Shi (Brzustowicz, M.S. 2003)

2001 Charles Lu (Driscoll, M.S. 2001)

Postdoctoral Trainees

2011 Andrew Nato, 2011-2012

2005 Xiangyang Kong, 2002-2005

Membership on Editorial Boards of Scholarly or Professional Journals

2011-ongoing Editorial Board, Scientific Reports

2003-2006 Editorial Board, Genome Research

Membership/Offices Held in Scholarly and Professional Societies

2003-ongoing K-12 Mentor - American Society of Human Genetics

1986-ongoing American Society of Human Genetics

1986-ongoing American Association for the Advancement of Science

Service

Service to Rutgers University

2014 Department of Genetics Seminar Series, hosted Dr. Douglas Wallace, Children's Hospital of Pennsylvania

2013-2014 Member, Computational Genetics Faculty Search Committee, Department of Genetics

2013 Department of Genetics Seminar Series, hosted Dr. Terry Hassold, Washington State University

2012-ongoing Convener, Departmental Mentoring Committee for Kevin Chen

2012-ongoing Member, Departmental Mentoring Committee for Andy Kern

2012-ongoing Convener, Departmental Mentoring Committee for Jin Xing

2012 Department of Genetics Seminar Series, hosted Dr. Dorothy Warburton, Columbia University

2011-ongoing Member, Policy and Planning Committee, Department of Genetics.

2011-2013 Member, Rutgers University Advisory Committee on Appointments and Promotions

2010-2011 Chair, Computational Genetics Faculty Search Committee, Department of Genetics

2009-2010 Member, SAS Nominations and Elections Committee

2009-2010 Member, Search Committee for Department Chairperson, Department of Genetics

2009 Panel speaker, Douglass Project SUPER (Science for Undergraduates: A Program for Excellence in Research)

2009 Reviewer, Busch Biomedical Grant Applications

2008-2009 Member, Committee to review the Rutgers Office of Information Technology, and the position of Interim Vice President of OIT

2007-ongoing Member, Joint Graduate Program in Molecular Genetics Microbiology and Immunology

2007 Co-coordinator, DIMACS/NCBI Workshop: A Field Guide to GenBank and NCBI Molecular Biology Resources

2006-ongoing System administrator of the departmental computer cluster

2006-ongoing Member, Undergraduate Curriculum Committee, Department of Genetics

2006-2008 Member, Biological Sciences Area Committee

2006 Co-coordinator, DIMACS Short Course: Exploring 3D Molecular Structures Using NCBI Tools

2006 Member, RUCDR IT Search Committee

2005-2009 Member, Genetics Seminar Committee, Department of Genetics

2005-2006 Member, Human Genetics Faculty Search Committee, Department of Genetics

2005 Department of Genetics Seminar Series, hosted Dr. Vivian Cheung, University of Pennsylvania

2004-ongoing Chair, RUCDR IT Committee, Department of Genetics

2004-ongoing Member, Undergraduate Honors Evaluation Committee, Department of Genetics

2004-2005 Member, Human Genetics Search Committee, Department of Genetics

2004 Department of Genetics Seminar Series, hosted Dr. Susan Slaugenhaupt

2004 Department of Genetics Seminar Series, hosted Dr. Evan Eichler, University of Washington

2004 Co-coordinator, DIMACS/NCBI Gene Expression Resources Workshop

2003-ongoing Undergraduate Advisor, Department of Genetics

2003-2004 Member, CINJ/Genetics Search Committee, Department of Genetics

2003 Department of Genetics Seminar Series, hosted Dr. Josephine Hoh, Yale University

2003 Co-coordinator, DIMACS/NCBI Workshop: A Field Guide to the NCBI

2002-2003 Member, CAS/Genetics Search Committee, Department of Genetics

2002 Department of Genetics Seminar Series, hosted Dr. Eric Lai, Glaxo SmithKline

2002 Member, Human Genetics Search Committee, Department of Genetics

2001-ongoing Member, Faculty of the Graduate School-New Brunswick

2001-ongoing Member, Joint Graduate Program in Biochemistry

2001-ongoing Member, Joint Graduate Program in Microbiology and Molecular Genetics

2001 Department of Genetics Seminar Series, hosted Dr. Elaine Ostrander, University of Washington

2001 Member, Animal Genetics Search Committee, Department of Animal Science

2000 Department of Genetics Seminar Series, hosted Dr. John Quackenbush, Stanford University

Contributions to the Advancement of the Academic Profession

1992-ongoing Manuscript reviews for: American Journal of Human Genetics, Biological Psychiatry, Bioinformatics, European Journal of Human Genetics, Genes Brain & Behavior, Genetic Epidemiology, Genome Research, Genomics, Heredity, Human Genetics, Human Heredity, Human Molecular Genetics, Journal of Assisted Reproduction and Genetics, Journal of Heredity, Mammalian Genome, Mutation Research, Neuropsychiatric Genetics, Pharmacogenomics, PLoS Genetics

Service to Other Public Bodies

03/2014 Guest Presenter, Career Day at Woodrow Wilson Middle School, Edison, NJ

01/2013 *Ad hoc* member, NIH Center for Inherited Disease Research Study Section (CIDR-B) Conflict Review

04/2012-ongoing Elected member of the Board of Education, Metuchen School District, Metuchen, NJ

03/2012 Guest Presenter, Career Day at Woodrow Wilson Middle School, Edison NJ

11/2011 *Ad hoc* member, NIH NHLBI Special Emphasis Review Panel

09/2010 *Ad hoc* member, NIH Center for Inherited Disease Research Study Section (CIDR-B) Special Emphasis Panel

09/2010 Ad hoc member, NIH Genetics of Health and Disease (GHD) Study Section

04/2010 *Ad hoc* member, Conflict Review, NIH Center for Inherited Disease Research Study Section (CIDR-A)

09/2009 *Ad hoc* member, NIH Neurotechnology (NT) Study Section

08/2009 *Ad hoc* chair, NIH Center for Inherited Disease Research Study Section (CIDR-A)

05/2009 *Ad hoc* member, NIH Challenge Grant reviewer for Genes, Genomes, and Genetics, ZRG1 GGG-F (58)

03/2009 *Ad hoc* member, NIH/NIA Special Emphasis Panel/Scientific Review Group 2009/05 ZHG1 HGR-P (M1)

07/2008 *Ad hoc* member, NIH/NIA Special Emphasis Panel/Scientific Review Group 2008/10 ZAG1 ZIJ-5 (O6

03/2008 *Ad hoc* member, NIH/NIA Special Emphasis Panel/Scientific Review Group 2008/05 ZAG1 ZIJ-5 (M2), reviewed applications for RFA New Interventions for Menopausal Symptoms*: Important Programmatic Consideration*

06/2007 NIH/NIDDK Special Emphasis Grant Reviewer, *Ad hoc*

05/2005-06/2007 NIH/GCAT Study Section, *Ad hoc,* 5/05,6/07

2005-2008 NIH Center for Inherited Disease Research Study Section (CIDR-A), Member

2005-2008 DNA Day activities at Campbell Elementary School, Metuchen, NJ

2005-2006 Judge, Guest Speaker, Wardlaw-Hartridge High School Science Fair, Edison, New Jersey

2005 Co-moderator, Platform Session, ASHG Annual Meeting

2004-ongoing Motif BioSciences Scientific Advisory Board

2004 International DNA Sequencing Advisory Committee

2004 DNA Day activities at Apple Montessorri School, Bonhamtown, NJ

07/2002 NIH/SSS-Y Study Section, *Ad hoc*

03/2002-06/2004 NIH/GNM Study Section, *Ad hoc,* 3/02,6/04

01/2002 NIH/NIEHS Special Emphasis Grant Reviewer, *Ad hoc*

12/2001 NIH/NHLBI Special Emphasis Grant Reviewer, *Ad hoc*

10/2000 NIH/MGN Study Section, *Ad hoc*

06/1999-05/2001 USDA Review Panel Animal Genome and Genetic Mechanisms, *Ad hoc,* 6/99,5/00,5/01

1998-2004 Board of Scientific Counselors, National Center for Biotechnology Information, NIH

1994-2002 Human Genome Organization (HUGO) Chromosome 1 Committee

1994-2000 International Chromosome 1 Workshop Committee