

Curriculum Vitae

MICHAEL P. EPSTEIN

PERSONAL INFORMATION

Born: December 29, 1973, Boston, Massachusetts

Married: Lenea Epstein

Address: Department of Human Genetics
Emory School of Medicine
615 Michael Street, Suite 301
Atlanta, GA 30322
(404) 712-8289 (Phone)
(404) 727-3949 (FAX)

E-Mail: mepstein@genetics.emory.edu

EDUCATION

Duke University 1996
B.S. in Mathematics and Biological Anthropology
cum laude

University of Michigan 1998
M.S. in Biostatistics

University of Michigan 2002
Ph.D. in Biostatistics
Dissertation: "Statistical Methods in Gene Mapping of Familial Traits"
Co-Chairs: Drs. Michael Boehnke and Xihong Lin

PROFESSIONAL EXPERIENCE

Undergraduate Research Assistant 1995-1996
Center of Human Genetics
Duke University
Supervisors: Drs. Marcy Speer and Margaret Pericak-Vance

NIH Predoctoral Trainee 1996-1999
Genome Science Training Program
University of Michigan

Graduate Research Assistant 1996-2002
Department of Biostatistics and Center for Statistical Genetics
University of Michigan

Horace H. Rackham Fellow 2001-2002
Horace H. Rackham School of Graduate Studies
University of Michigan

PROFESSIONAL EXPERIENCE (continued)

Assistant Professor Department of Human Genetics Emory University	2002-
Adjunct Faculty Member Department of Biostatistics Emory University	2003-
Faculty Member Genetics and Molecular Biology Program Graduate Division of Biological and Biomedical Sciences Emory University	2005-

HONORS

Duke University Dean's List with Distinction	1993-1996
Duke University Undergraduate Research Scholarship	1995
University of Michigan Outstanding First-Year Student in the Department of Biostatistics	1997
National Institutes of Health Genome Science Pre-Doctoral Traineeship	1996-1999
University of Michigan Horace H. Rackham School of Graduate Studies Pre-Doctoral Fellowship	2001-2002
Emory University Research Committee Award	2003-2004

PROFESSIONAL ORGANIZATIONS

American Society of Human Genetics
American Statistical Association
International Biometric Society
International Genetic Epidemiology Society

PROFESSIONAL SERVICE

Associate Editor for:

American Journal of Human Genetics

PROFESSIONAL SERVICE (continued)

Referee for:

American Journal of Epidemiology
American Journal of Human Genetics
Biometrics
Biometrical Journal
Biostatistics
BMC Genetics
Computational Statistics & Data Analysis
Genes & Immunity
Genetic Epidemiology
Genetics
Human Heredity
Journal of the American Statistical Association
Statistical Applications in Genetics and Molecular Biology
Theoretical Population Biology

Grant Reviewer for:

NIDDK, Special Emphasis Panel, member 2006
NIH, BMRD Study Section, Ad-hoc member 2007

External Reviewer for:

Michael Smith Foundation for Health Research
Wellcome Trust

Organizer for:

ENAR 2006 Junior Faculty Workshop

Session Chair for:

‘Statistical Methods for Analysis of Gene-Environment Interaction’, The Biometric Society ENAR meetings, Austin, Texas, March 2005

‘Molecular Basis of Disorders with Complex Inheritance II: Phenotypes and Haplotypes’, American Society of Human Genetics, Salt Lake City, Utah, October 2005

RESEARCH EXPERIENCE

Facioscapulohumeral Muscular Dystrophy Genome Scan	1996
Finland-United States Investigation of NIDDM Genetics (FUSION) Study	1996-2001
Posterior Polymorphous Corneal Dystrophy Genome Scan	2000-2003
Primary Open-Angle Glaucoma Genome Scan	2000-2001

Michigan Polybrominated biphenyls (PBB) Study 2002-

TEACHING EXPERIENCE

Teaching Assistant 1998
Introduction to Probability Theory
Department of Biostatistics
University of Michigan

Guest Lecturer 2002-
Genetic Epidemiology
Emory University

Small Group Facilitator 2003-
Human and Molecular Genetics
Emory University

Lecturer 2003-
Graduate Human Genetics
Emory University

Guest Lecturer 2003
Introduction to Statistical Genetics
Emory University

Lecturer 2004
Current Topics on Genetics: Methods Used to Discover Genes Involved
in Complex Traits
Emory University

Small Group Facilitator 2007-
Foundations of Medicine: Normal Human
Emory University

DOCTORAL COMMITTEE SERVICE

Jessica Hunter, Department of Human Genetics, Member

Lydia Kwee, Department of Biostatistics, Co-Chair

Tiffany Oliver, Department of Human Genetics, Member

Kira Taylor, Department of Epidemiology, Member

Kevin Viel, Department of Epidemiology, Member

INVITED SPEAKER

“Variance-Component Mapping Methods for Quantitative Trait Data”, Medical Statistics-Current Developments in Statistical Methodology for Genetic Architecture of Complex Diseases, Oberwolfach, Germany, February 2003.

“Inference on Specific Haplotype Effects in Case-Control Studies”, Medical Statistics-Current Developments in Statistical Methodology for Genetic Architecture of Complex Diseases, Oberwolfach, Germany, February 2003.

“Inference on Specific Haplotype Effects in Case-Control Studies Using Unphased Genotype Data”, Department of Biostatistics, University of Alabama-Birmingham, March 2003.

“A General Variance-Component Framework for Gene Mapping of Non-Normal Trait Data”, Center for Statistical Science, Brown University, April 2003.

“Improved Inference on Haplotype Effects in Case-Control Studies Using Unphased Genotype Data”, Department of Biostatistics, University of North Carolina, January 2004.

‘Fine Mapping of Disease in Case-Control Studies Using Haplotype Similarity’, International Conference on Statistics in Health Sciences, Nantes, France, June 2004

‘Linkage Disequilibrium Mapping Using Both Parental and Unrelated Control Information’, Department of Biostatistics, Yale University, September 2004

‘Genetic Association Analyses Using Data from Triads and Unrelated Subjects’, Department of Biostatistics, University of North Carolina, April 2005

‘Statistical Genetics and Genetic Epidemiology of Complex Human Traits’, Genetics Special Interest Group, American Epilepsy Society Meeting, December 2005

‘Improved Association Analyses Based on Case-Parent Triads’, Department of Epidemiology, Columbia University, February 2006

‘Haplotypes and Fine Mapping’, NIAMS Short Course in Statistical Genetics, March 2006

‘Improved Association Analyses Based on Case-Parent Triads’, Department of Statistics, University of Georgia, April 2006

‘A Simple and Improved Correction for Population Stratification in Case-Control Studies’, National Cancer Institute, November 2006

‘A Powerful Multilocus Association Test for Quantitative Traits’, International Chinese Statistical Association Conference, Raleigh, NC, June 2007

‘A Simple and Improved Correction for Population Stratification in Case-Control Studies’, Joint Statistical Meetings, Salt Lake City, August 2007

‘A Simple and Improved Correction for Population Stratification in Case-Control Studies’, International Statistical Meetings, Lisbon, Portugal, August 2007

PUBLICATIONS

Ghosh, S., Watanabe, R.M., Valle, T.T., Hauser, E.R., Magnuson, V.L., Langefeld, C.D., Ally, D.S., Mohlke, K.L., Silander, K., Kohtamäki, K., Chines, P., Balow, J., Birznieks, G., Chang, J., Eldridge, W., Erdos, M.R., Karanjawala, Z.E., Knapp, J.I., Kudelko, K., Martin, C., Morales-Mena, A., Musick, A., Musick, T., Pfahl, C., Porter, R., Rayman, J.B., Rha, D., Segal, L., Shapiro, S., Sharaf, R., Shurtleff, B., So, A., Tannenbaum, J., Te, C., Tover, J., Unni, A., Welch, C., Whiten, R., Witt, A., Blaschak-Harvan, J., Douglas, J.A., Duren, W.L., **Epstein, M.P.**, Fingerlin, T.E., Kaleta, H.S., Lange, E.M., Li, C., McEachin, R.C., Stringham, H.M., Trager, E., White, P.P., Eriksson, J., Toivanen, L., Vidgren, G., Nylund, S.J., Tuomilehto-Wolf, E., Ross, E.H., Demirchyan, E., Hagopian, W.A., Buchanan, T.A., Tuomilehto, J., Bergman, R.N., Collins, F.S., and Boehnke, M. (2000) The Finland-United States Investigation of Non-Insulin-Dependent Diabetes Mellitus Genetics (FUSION) Study. I. An autosomal genome scan for genes that predispose to Type 2 diabetes. *American Journal of Human Genetics* 67:1174-1185.

Watanabe, R.M., Ghosh, S., Langefeld, C.D., Valle, T.T., Hauser, E.R., Magnuson, V.L., Mohlke, K.L., Silander, K., Ally, D.S., Chines, P., Blaschak-Harvan, J., Douglas, J.A., Duren, W.D., **Epstein, M.P.**, Fingerlin, T.E., Kaleta, H.S., Lange, E.M., Li, Chun, McEachin, R.C., Stringham, H.M., Trager, E., White, P.P., Balow, J., Birznieks, G., Chang, J., Eldridge, W., Erdos, M.R., Karanjawala, Z.E., Knapp, J.I., Kudelko, K., Martin, C., Morales-Mena, A., Musick, A., Musick, T., Pfahl, C., Porter, R., Rayman, J.B., Rha, D., Segal, L., Shapiro, S., Sharaf, R., Shurtleff, B., So, A., Tannenbaum, J., Te, C., Tovar, J., Unni, A., Welch, C., Whiten, R., Witt, A., Kohtamäki, K., Ehnholm, C., Eriksson, J., Toivanen, L., Vidgren, G., Nylund, S.J., Tuomilehto-Wolf, E., Ross, E.H., Demirchyan, E., Hagopian, W.A., Buchanan, T.A., Tuomilehto, J., Bergman, R.N., Collins, F.S., and Boehnke, M. (2000) The Finland-United States Investigation of Non-Insulin-Dependent Diabetes Mellitus Genetics (FUSION) Study. II. An Autosomal Genome Scan for Diabetes-Related Quantitative-Trait Loci. *American Journal of Human Genetics* 67:1186-1200.

Epstein, M.P., Duren, W.L., and Boehnke, M. (2000) Improved inference of relationship for pairs of individuals. *American Journal of Human Genetics* 67:1219-1231.

Epstein, M.P., and Boehnke, M. (2002) Relationship testing. In: Elston R.C., Olson J.M., Palmer L, editors, *Biostatistical Genetics and Genetic Epidemiology*. John Wiley and Sons Limited, Chicester, pp 673-678.

Epstein, M.P., Lin X., and Boehnke, M. (2002) Ascertainment-adjusted parameter estimates revisited. *American Journal of Human Genetics* 70: 886-895.

Epstein, M.P. (2002) Adjusting for ascertainment in variance-component analyses. *Genetic Epidemiology* 23: 209-213.

Epstein, M.P., Lin X., and Boehnke, M (2003). A tobit variance-component method for linkage analysis of censored trait data. *American Journal of Human Genetics* 72: 611-620

Moroi S.E., Gokhale P.A., Schteingart M.T., Sugar A., Downs C.A., Shimizu S., Krafchak C., Fuse N., Elnor S.G., Elnor V.M., Flint A., **Epstein M.P.**, Boehnke M., Richards J.E. (2003) Clinicopathologic correlation and genetic analysis in a case of posterior polymorphous corneal dystrophy. *American Journal of Ophthalmology* 135: 461-470

Epstein M.P. and Satten G.A. (2003) Inference on haplotype effects in case-control studies using unphased genotype data. *American Journal of Human Genetics* 73: 1316-1329

Silander K., Valle T.T., Scott L.J., Mohlke K.L., Stringham H.M., Wiles K.R., Duren W.L., Doheny K., Pugh E., Chines P., Narisu N., White P.P., Watanabe R.M., Fingerlin T.E., Jackson A.U., Li C., Colby K., Hollstein P., Humphreys K.M., Lambert J., Lazaridis K.N., Lin G., Morales-Mena A., Patzkowski K., Pfahl C., Porter R., Rha D., Segal L., Suh Y., Tovar J., Unni A., Welch C., Douglas J.A., **Epstein M.P.**, Hauser E.R., Hagopian W., Buchanan T.A., Bergman R.N., Tuomilehto J., Collins F.S., Boehnke M. (2004) A large set of Finnish affected sibling pair families with type 2 diabetes mellitus suggests susceptibility loci on chromosomes 6,11, and 14. *Diabetes* 53: 821-829

Satten G.A., **Epstein M.P.** (2004) Comparison of prospective and retrospective methods for haplotype inference in case-control studies. *Genetic Epidemiology* 27: 192-201

Shimizu S., Krafchak C., Fuse N., **Epstein M.P.**, Schteingart M.T., Sugar A., Eibschitz-Tsimhoni M., Downs C.A., Rozsa F., Trager E.H., Reed D.M., Boehnke M., Moroi S.E., Richards J.E. (2004) A locus for posterior polymorphous corneal dystrophy (PPCD3) maps to chromosome 10. *American Journal of Medical Genetics* 130A: 372-377

Sullivan A.K., Allen E.G., Marcus M., **Epstein M.P.**, Anido A.E., Brown J., Edwards I., Harkreader K., He W., Leslie M.L., Novak G., Paquin J.J., Scott E.H., Shubeck L.J., Sowemimo D., Taft L., Yadav-Shah M., and Sherman S.L. (2005) Examination of the molecular characteristics of the FMR1 gene to identify risk factors for ovarian dysfunction among permutation carrier women. *Human Reproduction* 20: 402-412

Epstein, M.P., Veal C.D., Trembath R.C., Barker J. NWN., Li C., and Satten G.A. (2005) Genetic association analyses using data from triads and unrelated subjects. *American Journal of Human Genetics* 76: 592-608

Satten, G.A., Allen A.S., and **Epstein M.P.** Discussion of 'Likelihood-based inference on haplotype effects in genetic association studies'. *Journal of the American Statistical Association*, in press

Openo KK, Schulz JM, Vargas CA, Orton CS, **Epstein MP**, Schnur RE, Scaglia F, Berry GT, Gottesman G, Ficicioglu C, Slonim AE, Schroer RJ, Yu C, Rangel V, Kenan J, Lamance K, Fridovich-Keil. JL (2006) Epimerase-deficiency galactosemia is not a binary condition. *Am J Hum Gen.* 78: 89-102

Epstein M.P., Waldman I.W., Satten G.A (2006) Improved association analyses of disease subtypes in case-parent triads. *Genetic Epidemiology* 30: 209-219

Epstein M.P., Kwee LC, Manatunga AK, Duncan R, Allen AS, Satten G.A (2007) Simple methods for assessing haplotype-environment interactions in case-only and case-control studies. *Genetic Epidemiology* 31: 75-90

Epstein M.P., Allen A.S., Satten G.A. (2007) A simple and improved correction for population stratification in case-control studies. *American Journal of Human Genetics* 80: 921-930

Tang Y, **Epstein MP**, Anderson GM, Zabetian CP, Cubells JF. Genotypic and Haplotypic Associations of the *DBH* Gene with Plasma Dopamine β -Hydroxylase Activity in African Americans. *European Journal of Human Genetics*, in press

Allen EG, Sullivan AK, Marcus M, Small C, Dominguez C, **Epstein MP**, Charen K, He W, Taylor K, Sherman SL. Examination of reproductive aging milestones among women who carry the FMR1 premutation. *Human Reproduction*, in press

Tang Y, Gillespie CF, **Epstein MP**, Mao P, Jiang F, Chen Q, Cai Z, Mitchell PB. Gender differences in 542 Chinese inpatients with schizophrenia. *Schizophrenia Research*, in press

Nakamoto M, Nalavadi V, **Epstein MP**, Narayanan U, Bassell GJ, Warren ST. Fragile X mental retardation protein deficiency leads to excess mGluR5-dependent internalization of AMPA receptors. *Proceedings of the National Academy of Science*, in press

Kwee LC, Liu D, Lin X, Ghosh D, **Epstein MP**. A powerful and flexible multi-locus association test for quantitative traits. *American Journal of Human Genetics*, in press.

Bradley RG, Binder EB, **Epstein MP**, Tang Y, Nair HP, Liu W, Gillespie CF, Berg T, Evces M, Newport DJ, Stowe ZN, Heim CM, Nemeroff CB, Schwartz A, Cubells JF, Ressler KJ. Influence of child abuse on adult depression is moderated by the corticotrophin releasing hormone receptor gene. *Archives of General Psychiatry*, in press

Alisch RS, Jin P, **Epstein M**, Casparly T, Warren ST (2007) *Argonaute2* is essential for mammalian gastrulation and proper mesoderm formation. *PLoS Genet* 3(12): e227.

Epstein MP, Kwee LC. Haplotype Association Analysis. In: Lin S., Zhao H., editors, *Handbook on analyzing human genetic data-computational approaches and software*. Springer, UK, in press.

ABSTRACTS

Epstein, M.P., Duren, W.L., and Boehnke, M. Improved identification of most probable relationships in relative pairs. Refereed poster presentation: American Society of Human Genetics, San Francisco, October 19-23, 1999. *American Journal of Human Genetics* 65: A248.

Watanabe R.M., Langefeld C.D., **Epstein M.**, Valle T., Ghosh S., Collins F.S., Bergman R.N., Boehnke M., the FUSION Study Investigators. Genome-wide linkage analysis of type 2 diabetes related quantitative traits in the FUSION study. Refereed poster presentation: American Society of Human Genetics, San Francisco, October 19-23, 1999. *American Journal of Human Genetics* 65:A452.

Epstein, M.P., Duren, W.L., and Boehnke, M. Improved relationship inference for pairs of individuals. Refereed poster presentation: American Society of Human Genetics, Philadelphia, October 3-7, 2000. *American Journal of Human Genetics* 67:A308.

Epstein, M.P., Duren, W.L., and Boehnke, M. Improved relationship inference for pairs of individuals. Slide presentation: The Biometric Society ENAR meetings, Charlotte, North Carolina, March 24-28, 2001.

Epstein, M.P., Lin, X., and Boehnke, M. Variance-component linkage methods for non-normally distributed trait data. Refereed slide presentation: American Society of Human Genetics, San Diego, October 12-16, 2001.

Epstein, M.P., Lin X., and Boehnke, M. A tobit variance-component method for analyzing truncated trait data. Refereed poster presentation: American Society of Human Genetics, Baltimore, October 15-19, 2002.

Satten, G.A., **Epstein M.P.** Inference of haplotypes in case-control studies. Refereed slide presentation: Joint Statistical Meetings, San Francisco, August 3-7, 2003

Epstein M.P., Satten G.A. Inference of haplotype effects in case-control studies using unphased genotype data. Refereed slide presentation: International Genetic Epidemiology Society, Redondo Beach, November 3-4, 2003.

Epstein M.P., Lin X., and Boehnke M. Prospective and retrospective variance-component linkage methods for complex trait data. Refereed poster presentation: American Society of Human Genetics, Los Angeles, November 4-8, 2003.

Epstein M.P., Satten G.A. Fine mapping of disease using haplotype similarity. Refereed poster presentation: American Society of Human Genetics, Toronto, October, 2004

CURRENT GRANT SUPPORT

R01 HG003618-01A2 (Epstein) 7/01/2006 – 6/30/2011
NIH/NHGRI
Novel Statistical Methods for Human Gene Mapping

R01 GM046331-13 (PI: Reines) 7/01/2005 – 6/30/2010
NIH/NIGMS
Title: RNA Polymerase II Elongation Complex: Structure & Function

R01 MH071537-01A1 (Ressler) 4/01/2006 – 3/31/2011
NIMH
Title: Genetic and Trauma-Related Risk Factors for PTSD

Merit Review Grant (PI: Duncan) 10/2005-9/2010
VA Merit Review
Title: Sensorimotor gating in schizophrenia

R01 MH076439-01 (PI: Zwick) 9/30/05 - 9/29/10
NIH/NIMH
Identifying Autism Susceptibility Genes By High-Throughput Resequencing

PAST GRANT SUPPORT

Emory URC 2003037 (PI: Epstein) 6/1/2003 – 6/1/2004
Emory University
Title: Variance-Component Statistical Methods for Gene Mapping of Complex Diseases and Surrogate Traits

REFERENCES

Dr. Michael Boehnke
Department of Biostatistics
University of Michigan
1420 Washington Heights
Ann Arbor, MI 48109-2029
734-936-1001
boehnke@umich.edu

Dr. Xihong Lin
Department of Biostatistics
Harvard University
655 Huntington Avenue
Building II, Room 419
Boston, MA 02115
617-432-2914
xlin@hsph.harvard.edu

Dr. Susan Murray
Department of Biostatistics
University of Michigan
1420 Washington Heights
Ann Arbor, MI 48109-2029
734-936-1013
skmurray@umich.edu

Dr. Julia Richards
Kellogg Eye Center
University of Michigan
1000 Wall Street
Ann Arbor, MI 48105
734-936-8966
richj@umich.edu

Dr. Richard Watanabe
Department of Preventive Medicine
Division of Biostatistics
University of Southern California
1540 Alcazar Street, CHP-220
Los Angeles, CA 90089-9011
323-442-2053
rwatanab@usc.edu