CURRICULUM VITAE

Michael Boehnke

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PERSONAL INFORMATION

Born:	May 16, 1956, Eugene, Oregon
Married:	Betsy Foxman
Children:	David, Kevin, and Richard
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EDUCATION

B.A. Honors College in Mathematics with Distinction, University of Oregon, 1977

Coursework in Mathematics and Biology, Albert-Ludwigs-Universität, Freiburg, West Germany, 1977-1978

Ph.D. in Biomathematics, University of California, Los Angeles, 1983
Dissertation: "Advances in Pedigree Analysis: Ascertainment, Goodness of Fit, and Optimization". Advisor: Kenneth Lange.

PROFESSIONAL EXPERIENCE

Research Associate, Cedars-Sinai Medical Center, 1979-1980

Teaching Assistant, Department of Biology, UCLA, 1979-1981

Research Assistant, Department of Biomathematics, UCLA, 1980-1983

Assistant Professor, Department of Biostatistics, University of Michigan, 1984-1989

Associate Professor, Department of Biostatistics, University of Michigan, 1989-1993

Professor, Department of Biostatistics, University of Michigan, 1993-present

Director, University of Michigan Genome Science Training Program, 1995-present

Director, University of Michigan Center for Statistical Genetics, 1999-present

HONORS

Phi Beta Kappa, 1976

DeCou Prize Winner as Outstanding Mathematics Undergraduate at the University of Oregon, 1977

Fulbright Scholar in Freiburg, West Germany, 1977-1978

National Institutes of Health Pre-Doctoral Trainee, 1978-1983

Snedecor Award for Outstanding Statistical Applications Paper, American Statistical Association, 1993, joint with Kenneth Lange

Myrto Lefkopolou Distinguished Lecturer, Harvard University School of Public Health, 1994

University of Michigan School of Public Health Excellence in Research Award, 1999

Pharmacia Research Professor of Biostatistics, 1999 - present

Bernard Greenberg Lecturer, Department of Biostatistics, University of North Carolina School of Public Health, 2002

Fellow, American Statistical Association, 2002

PROFESSIONAL ORGANIZATIONS

American Association for the Advancement of Science

American Society of Human Genetics

American Statistical Association

International Genetic Epidemiology Society

PUBLICATIONS

a) Publications which have received peer review

1. **Boehnke, M.**, Guzman, M., Hehmann, R., Leibold, W., and Gatti, R.A. (1980) HLA-D typing with lymphoblastoid cell lines. VIII. Cut points and gene frequency estimates by multiple testing analysis. *Tissue Antigens* 16:161-168.

2. Lange, K., **Boehnke, M.**, and Carson, R. (1981) Moment computations for subcritical branching processes. *Journal of Applied Probability* 18:52-64.

3. Lange, K., and **Boehnke, M.** (1982) How many polymorphic marker genes will it take to span the human genome? *American Journal of Human Genetics* 34:842-845.

4. Lange, K., and **Boehnke, M.** (1983) Extensions to pedigree analysis. IV. Covariance components models for multivariate traits. *American Journal of Medical Genetics* 14:513-524.

5. Lange, K., and **Boehnke, M.** (1983) Some combinatorial problems of DNA restriction fragment length polymorphisms. *American Journal of Human Genetics* 35:177-192.

6. **Boehnke, M.**, Conneally, P.M., and Lange, K. (1983) Two models for a maternal factor in the inheritance of Huntington disease. *American Journal of Human Genetics* 35:845-860.

7. Lange, K., and **Boehnke, M.** (1983) Extensions to pedigree analysis. V. Optimal calculation of Mendelian likelihoods. *Human Heredity* 33:291-301.

8. **Boehnke, M.**, and Greenberg, D.A. (1984) The effects of conditioning on probands to correct for multiple ascertainment. *American Journal of Human Genetics* 36:1298-1308.

9. **Boehnke, M.**, Moll, P.P., Lange, K., Weidman, W.H., and Kottke, B.A. (1986) Univariate and bivariate analyses of cholesterol and triglyceride levels in pedigrees. *American Journal of Medical Genetics* 23:775-792.

10. Hodge, S.E., and **Boehnke, M.** (1986) A note on Cannings and Thompson's sequential sampling scheme for pedigrees. *American Journal of Human Genetics* 3:274-281.

11. **Boehnke, M.** (1986) Estimating the power of a proposed linkage study: a practical computer simulation approach. *American Journal of Human Genetics* 39:513-527.

12. **Boehnke, M.**, Moll, P., Kottke, B., and Weidman, W. (1987) Partitioning the variability of fasting plasma glucose levels in pedigrees: genetic and environmental factors. *American Journal of Epidemiology* 125:679-689.

13. Bird, T., **Boehnke, M.**, Schellenberg, G., Deeb, S., and Lipe, H. (1987) The use of apolipoprotein CII as a genetic marker for myotonic dystrophy. *Archives of Neurology* 44:273-275.

14. Schellenberg, G., Deeb, S., **Boehnke, M.**, Bryant, E., Martin G., Lampe, T., and Bird, T. (1987) Association of an apolipoprotein CII allele with familial dementia of the Alzheimer type. *Journal of Neurogenetics* 4:97-108.

15. Diehl, S.R., **Boehnke, M.**, Collins, F.S., Erickson, R.P., Karolyi, I.J., Ploughman, L.M., Pericak-Vance, M.A., Aylsworth, A.S., and Roses, A.D. (1987) Linkage analyses of peripheral neurofibromatosis to DNA markers on chromosome 8. *Journal of Medical Genetics* 24:532-534.

16. Bird, T.D., **Boehnke, M.**, Anderson, J., Lampe, T., and Larson E. (1987) The frequency of C4B variants of complement in familial and sporadic Alzheimer's disease. *Alzheimer Disease and Associated Disorders* 1:251-255.

17. Diehl, S.R., **Boehnke, M.**, Erickson, R.P., Baxter, A.B., Bruce, M.A., Lieberman, J.L., Platt, D.J., Ploughman, L.M., Seiler, K.A., Sweet, A.M., and Collins, F.S. (1987) Linkage analysis of von Recklinghausen neurofibromatosis to DNA markers on chromosome 17. *Genomics* 1:361-363.

18. Hanash, S.M., **Boehnke, M.**, Chu, E.H.Y., Neel, J.V., and Kuick, R.D. (1988) Non-random distribution of structural mutants following ethylnitrosourea treatment of cultured human

lymphoblastoid cells. *Proceedings of the National Academy of Sciences USA* 85:165-169.

19. Chu, E.H.Y, **Boehnke, M.**, Hanash, S.M., Kuick, R.D., Lamb, B.J., Neel, J.V., Niezgoda, W., Pivirotto, S., and Sundling, G. (1988) Estimation of mutation rates based on the analysis of polypeptide constituents of cultured human lymphoblastoid cells. *Genetics* 119:693-703.

20. Schwartz, A.G., **Boehnke, M.**, and Moll, P.P. (1988) Family risk index as a measure of familial heterogeneity of cancer risk: a population-based study in metropolitan Detroit. *American Journal of Epidemiology* 128:524-535.

21. **Boehnke, M.**, Young, M.R., and Moll, P.P. (1988) Comparison of sequential and fixed-structure sampling of pedigrees in complex segregation analysis of a quantitative trait. *American Journal of Human Genetics* 43:336-343.

22. Schellenberg, G.D., Bird, T.D., Wijsman, E.M., Moore, D.K., **Boehnke, M.**, Bryant, E.M., Lampe, T.H., Nochlin, D., Sumi, S.M., Deeb, S.S., Beyreuther, K., and Martin, G.M. (1988) Absence of linkage of chromosome 21q21 markers to familial Alzheimer's disease. *Science* 241:1507-1510.

23. Tarlo, K.S., **Boehnke, M.**, and Chin, B. (1988) Synergism of mutations in the mouse lymphoma cell mutagenicity assay by binary mixtures of methyl methanesulfonate and ethyl methanesulfonate. *Mutation Research* 206:239-246.

24. Lange, K., Weeks D., and **Boehnke, M.** (1988) Programs for pedigree analysis: MENDEL, FISHER, and dGENE. *Genetic Epidemiology* 5:471-472.

25. Young, M.R., **Boehnke, M.**, and Moll, P.P. (1989) Correcting for single ascertainment by truncation for a quantitative trait. *American Journal of Human Genetics* 43:705-708.

26. Diehl, S.R., **Boehnke, M.**, Erickson, R.P., Ploughman, L.M., Seiler, K.A., Lieberman, J.L., Clarke, H.B., Bruce, M.A., Schorry, E.K., Pericak-Vance, M.A., O'Connell, P., and Collins, F.S. (1989) A refined genetic map of the region of chromosome 17 surrounding the von Recklinghausen neurofibromatosis (NF1) gene. *American Journal of Human Genetics* 44:33-37.

27. **Boehnke, M.**, and Moll, P.P. (1989) Identifying pedigrees segregating at a major locus for a quantitative trait: an efficient strategy for linkage analysis. *American Journal of Human Genetics* 44:216-224.

28. Ploughman, L.M., and **Boehnke, M.** (1989) Estimating the power of a proposed linkage study for a complex genetic trait. *American Journal of Human Genetics* 44:543-551.

29. Olson, J.M., **Boehnke, M.**, Neiswanger, K., Roche, A.F., and Siervogel, R.M. (1989) Alternative genetic models for the inheritance of the phenylthiocarbamide (PTC) taste deficiency. *Genetic Epidemiology* 6:423-434.

30. **Boehnke, M.**, Arnheim, N., Li, H., and Collins, F.S. (1989) Fine structure genetic mapping of human chromosomes using the polymerase chain reaction on single sperm: experimental design considerations. *American Journal of Human Genetics* 45:21-32.

31. Ping, A.J., Reeve, A.E., Law, D.J., Young, M.R., **Boehnke, M.**, and Feinberg, A.P. (1989) Genetic linkage of Beckwith-Wiedemann syndrome to 11p15. *American Journal of Human Genetics* 44:720-723.

32. **Boehnke, M.**, Omoto, K.H., and Arduino, J.M. (1990) Selecting pedigrees for linkage analysis of a quantitative trait: the expected number of informative meioses. *American Journal of Human Genetics* 46:581-586.

33. Kwon, J.M., **Boehnke, M.**, Burns, T.L., and Moll, P.P. (1990) Commingling and segregation analyses: comparison of results from a simulation study of a quantitative trait. *Genetic Epidemiology* 7:57-68.

34. Roth, M.S., Weiner, G.J., Allen, E.A., Terry, V.H., Harden, C.E., **Boehnke, M.**, Kaminski, M.S., and Ginsburg, D. (1990) Molecular characterization of anti-idiotype antibody-resistant variants of a murine beta-cell lymphoma. *Journal of Immunology* 145:768-777.

35. **Boehnke, M.** (1990) Sample size guidelines for linkage analysis of a dominant locus for a quantitative trait by the method of lod scores. *American Journal of Human Genetics* 47:218-227.

36. Olson, J.M., and **Boehnke, M.** (1990) Monte Carlo comparison of preliminary methods for ordering multiple genetic loci. *American Journal of Human Genetics* 47:470-482.

37. Eto, K., Sumi, S.M., Bird, T.D., McEvoy-Bush, T., **Boehnke, M.**, and Schellenberg, G. (1990) Family with dominantly inherited ataxia, amyotrophy, and peripheral sensory loss: spinopontine atrophy or Machado-Joseph Azorean disease in another non-Portuguese family? *Archives of Neurology* 47:968-974.

38. Sieving, P.A., Bingham, E.L., Roth, M.S., Young, M.R., **Boehnke, M.**, Kuo, C.-Y., and Ginsburg, D. (1990) Linkage relationship of X-linked juvenile retinoschisis with Xp22.1-p22.3 probes. *American Journal of Human Genetics* 47:616-621.

39. Iannuzzi, M.C., Hidaka, N., **Boehnke, M.**, Bruck, M.E., Hanna, W., Collins, F.S., and Ginsburg, D. (1990) Analysis of the relationship of von Willebrand disease (vWD) and hereditary hemorrhagic telangiectasia and identification of a potential type IIA vWD mutation. *American Journal of Human Genetics* 48:757-763.

40. **Boehnke, M.** (1991) Allele frequency estimation from data on relatives. *American Journal of Human Genetics* 48:22-25.

41. **Boehnke, M.** (1991) Letter to the editor: reply to Chakraborty. *American Journal of Human Genetics* 49:243-244.

42. **Boehnke, M.**, Lange, K., and Cox, D.R. (1991) Statistical methods for multipoint radiation hybrid mapping. *American Journal of Human Genetics* 49:1174-1188.

43. Richards, J. E., Kuo, C., **Boehnke, M.**, and Sieving, P.A. (1991) Rhodopsin Thr58Arg mutation in a family with autosomal dominant retinitis pigmentosa. *Ophthalmology* 98:1797-1805.

44. Sowers, M.R., **Boehnke, M.**, Jannausch, M.L., Crutchfield, M., Corton, G., and Burns, T.L. (1992) Familiality and partitioning the variability of femoral bone mineral density in women of child-bearing age. *Calcified Tissue International* 50: 110-114.

45. **Boehnke, M.** (1992) Genetic Analysis Workshop 7: radiation hybrid and somatic cell hybrid mapping of chromosome 21. *Cytogenetics and Cell Genetics* 59:74-76.

46. **Boehnke, M.** (1992) Radiation hybrid mapping by minimization of the number of obligate chromosome breaks. *Cytogenetics and Cell Genetics* 59:96-98.

47. Schellenberg, G.D., **Boehnke, M.**, Wijsman, E.M, Moore, D.K., Martin, G.M., and Bird, T.D. (1992) Genetic association and linkage analysis of the apo CII locus and familial Alzheimer's disease. *Annals of Neurology* 31:223-227.

48. Lange, K., and **Boehnke, M.** (1992) Bayesian methods and optimal experimental design for gene mapping by radiation hybrids. *Annals of Human Genetics* 56:119-144.

49. Altherr, M.R., Plummer, S., Bates, G., MacDonald, M., Taylor, S., Lehrach, H., Frischauf, A.-M., Gusella, J., **Boehnke, M.**, and Wasmuth, J.J. (1992) Radiation hybrid map spanning the Huntington disease gene region of chromosome 4. *Genomics* 13:1040-1046.

50. **Boehnke, M.** (1992) Multipoint analysis for radiation hybrid mapping. *Annals of Medicine* 24:383-386.

51. Frazer, K.A., **Boehnke, M.**, Budarf, M.L., Wolff, R.K., Emanuel, B.S., Myers, R.M., and Cox, D.R. (1992) A radiation hybrid map of the region on human chromosome 22 containing the neurofibromatosis type 2 locus. *Genomics* 14:574-584.

52. Gorski, J.L., **Boehnke, M.**, Reyner, E.L., and Burright, E.N. (1992) A radiation hybrid map of the proximal short arm of the human X chromosome spanning Incontinentia Pigmenti 1 (IP1) translocation breakpoints. *Genomics* 14:657-665.

53. Spence, M.A., Bishop, D.T., **Boehnke, M.**, Elston, R.C., Falk, C., Hodge, S.E., Ott, J., Rice, J., Merikangas, K., and Kupfer, D. (1993) Methodological issues in linkage analyses for psychiatric disorders: secular trends, assortative mating, bilineal pedigrees. *Human Heredity* 43:166-172.

54. Richard, C.W. III, **Boehnke, M.**, Berg, D.J., Lichy, J.H., Meeker, T.C., Hauser, E., Myers, R.M., and Cox, D.R. (1993) A radiation hybrid map of the distal short arm of human chromosome 11, containing the Beckwith-Weidemann and associated embryonal tumor disease loci. A*merican Journal of Human Genetics* 52:915-921.

55. Chamberlain, J.S., **Boehnke, M.**, Frank, T.S., Kiousis, S., Xu, J., Guo, S.-W., Hauser, E.R., Norum, R.A., Helmbold, E.A., Markel, D.S., Keshavarzi, S.M., Jackson, C.E., Calzone, K., Garber, J., Collins, F.S., and Weber, B.L. (1993) BRCA1 maps proximal to D17S579 on chromosome 17q21 by genetic analysis. *American Journal of Human Genetics* 52:792-798.

56. Biesecker, B.B., **Boehnke, M.**, Calzone, K., Markel, D.S., Garber, J.E., Collins, F.S., and Weber, B.L. (1993) Genetic counseling for families with inherited susceptibility to breast and ovarian cancer. *Journal of the American Medical Association* 269:1970-1974.

57. Abel, K.J., **Boehnke, M.**, Prahalad, M., Ho, P., Flejter, W.L., Watkins, M., VanderStoep, J., Chandrasekharappa, S.C., Collins, F.S., Glover, T.W., and Weber, B.L. (1993) A

radiation hybrid map of the *BRCA1* region of chromosome 17q12-21. *Genomics* 17:632-641.

58. Flejter, W.L., Barcroft, C.L., Guo, S.-W., Lynch, E.D., **Boehnke, M.**, Chandrasekharappa, S., Hayes, S., Collins, F.S., Weber, B.L., and Glover, T.W. (1993) Multicolor FISH mapping with Alu-PCR amplified YAC clone DNA determines the order of markers in the BRCA1 region on chromosome 17q12-q21. *Genomics* 17:624-631.

59. Schork, N.J., **Boehnke, M.**, Terwilliger, J.D., and Ott, J. (1993) Two-trait-locus linkage analysis: a powerful strategy for mapping complex genetic traits. *American Journal of Human Genetics* 53:1127-1136.

60. Richards, J.E., Lichter, P.R., **Boehnke, M.**, Uro, J.L.A., Torrez, D., Wong, D., and Johnson, A.T. (1994) Mapping of a gene for autosomal dominant juvenile-onset open-angle glaucoma to chromosome 1q. *American Journal of Human Genetics* 54:62-70.

61. McDonald, M.T., Papenberg, K.A., Ghosh, S., Glatfelter, A.A., Biesecker, B.B., Helmbold, E.A., Markel, D.S., Zolotor, A., McKinnon, W.C., Vanderstoep, J.L., Jackson, C.E., Iannuzzi, M., Collins, F.S., **Boehnke, M.**, Porteous, M.E., Guttmacher, A.E., and Marchuk, D.A. (1994) A disease locus for hereditary haemorrhagic telangiectasia maps to chromosome 9q33-34. *Nature Genetics* 6:197-204.

62. Yu, C.-E., Payami, H., Olson, J.M., **Boehnke, M.**, Wijsman, E.M., Orr, H.T., Kukull, W.A., Goddard, K.A.B., Nemens, E., White, J.A., Alonso, M.E., Taylor, T.D., Ball, M.J., Kaye, J., Morris, J., Chui, H., Sadovnick, A.D., Martin, G.M., Larson, E.B., Heston, L.L., Bird, T.D., and Schellenberg, G.D. (1994) The apolipoprotien E/CI/CII gene cluster and late-onset Alzheimer disease. *American Journal of Human Genetics* 54:631-642.

63. Lunetta, K.L., and **Boehnke, M.** (1994) Multipoint radiation hybrid mapping: comparison of methods, sample size requirements, and optimal study characteristics. *Genomics* 21:92-103.

64. **Boehnke, M.** (1994) Limits of resolution of genetic linkage studies: implications for the positional cloning of human disease genes. *American Journal of Human Genetics* 55:379-390.

65. Couch, F.J., Abel, K.J., Brody, L.C., **Boehnke, M.**, Collins, F.S., and Weber, B.L. (1994) Localization of the gene for ATP citrate lyase (ACLY) distal to gastrin (GAS) and proximal to D17S856 on chromosome 17q12-q21. *Genomics* 21:444-446.

66. Oshima, J., Yu, C.-E., **Boehnke, M.**, Weber, J.L., Edelhoff, S., Wagner, M.J., Wells, D.E., Wood, S., Disteche, C.M., Martin, G.M., and Schellenberg, G.D. (1994) Integrated mapping analysis of the Werner Syndrome region of chromosome 8. *Genomics* 23:100-113.

67. Maliarik, M., Kost, J., Harrington, D., Major, M., Popovich, J., **Boehnke, M**., and Iannuzzi, M.C. (1994) Linkage analysis of major histocompatibility genes in familial sarcoidosis. *Sarcoidosis* 11:236-239.

68. Ford, D., Easton, D.F., Bishop, D.T., Narod, S.A., Goldgar, D.E., Haites, N., Milner, B., Allan, L., Ponder, B.A.J., Peto, J., Smith, S., Stratton, M., Lenoir, G.M., Feunteun, J., Lynch, H., Arason, A., Barkardottir, R., Egilsson, V., Black, D.M., Kelsell, D., Spurr, N., Devilee, P., Cornelisse, C.J., Varsen, H., Birch, J.M., Skolnick, M., Santibanezkoref, M.S., Teare, D., Steel, M., Porter, D., Cohen, B.B., Carothers, A., Smyth, E.M., Weber,

B., Newbold, B., **Boehnke, M**., Collins, F.S., Cannon-Albright, L.A., and Goldgar, D. (1994) Risks of cancer in BRCA1-mutation carriers. *Lancet* 343:692-695.

69. Lange, K., **Boehnke, M.**, Cox, D.R., and Lunetta, K.L. (1995) Statistical methods for polyploid radiation hybrid mapping. *Genome Research* 5:136-150.

70. Lunetta, K.L., **Boehnke, M.**, Lange, K., and Cox, D.R. (1995) Experimental design and error detection for polyploid radiation hybrid mapping. *Genome Research* 5:151-163.

71. Pawar, H., Bingham, E.L., Lunetta, K.L., Segal, M., Richards, J.E., **Boehnke, M.**, and Sieving, P.A. (1995) Refined genetic mapping of juvenile X-linked retinoschisis. *Human Heredity* 45:206-210.

72. Couch, F.J., Garber, J., Kiousis, S., Calzone, K., Hauser, E.R., Merajver, S.D., Frank, T.S., **Boehnke, M.**, Chamberlain, J.S., Collins, F.S., and Weber, B.L. (1995) Genetic analysis of eight breast-ovarian cancer families with suspected BRCA1 mutations. *Journal of the National Cancer Institute* 17:9-14.

73. **Boehnke, M.**, and Hulbert-Shearon, T. (1995) Recombination fraction estimate of zero in the presence of apparent recombinants: effects of incomplete penetrance and sporadic cases. *Genetic Epidemiology* 12:509-513.

74. Easton, D.F., Ford, D., Bishop, D.T., Haites, N., Milner, B., Allan, L., Easton D.F., Ponder, B.A.J., Peto, J., Smith, S., Ford, D., Stratton, M., Narod, S.A, Lenoir, G.M., Feunteun, J., Lynch, H., Arason, A., Barkdardottir, R., Egilsson, D.V., Bishop, D.T., Black, D.M., Kelsell, D., Spurr, N.K., Devilee, P., Cornelisse, C.J., Varsen, H., Birch, J.M., Santibanezkoref, M.S., Teare, M.D., Steel, M., Porter, D., Cohen, B.B., Carothers, A., Smyth, E., Weber, B., **Boehnke, M.**, Collins, F.S., Cannon-Albright, L.A., Goldgar, D., and Skolnick, M. (1995) Breast and ovarian-cancer incidence in BRCA1-mutation carriers. *American Journal Of Human Genetics* 56:265-271.

75. Narod, S.A., Ford, D., Devilee, P., Barkardottir, R.B., Lynch, H.T., Smith, S.A., Ponder, B.A.J., Weber, B.L., Garber, J.E., Birch, J.M., Cornelis, R.S., Kelsell, D.P., Spurr, N.K., Smyth, E., Haites, N., Sobol, H., Bignon, Y.J., Changclaude, J., Hamann, U., Lindblom, A., Borg, A., Piver, M.S., Gallion, H.H., Struewing, J.P., Whittemore, A., Tonin, P., Goldgar, D.E., Easton, D.F., Milner, B., Allan, L., Simard, J., Rommens, J., Mcgillivray, B., Green, R., Ives, E., Boyd, N., Rosen, B., Cole, D., Morgan, K., Moslehi, R., Ponder, B., Peto, J., Smith, S., Stratton, M., Dicioccio, R.A., Gallion, H., Santibanezkoref, M.S., Teare, M.D., Evans, D.G., Stoppalyonnet, D., Lalle, P., Bonaiti, C., Essioux, L., Girodet, C., Maugardlouboutin, C., Nicolleau, G., Longy, M., Toulouse, C., Horstein, I., Birnbaum, D., Eisinger, F., Karengueven, F., Noguchi, T., Hardouin, A., Rio, P., Machelardroumagnac, M., Nogues, C., Cohenhaguenauer, O., Lortholary, A., Bay, Jo., Arason, A., Barkdardottir, R.B., Egilsson, V., Bishop, D.T., Kelsell, D., Murday, V.A., Solomon, E., Spurr, N., Turner, G., Lenoir, G., Feunteun, J., Lynch, H., Lynch, J., Watson, P., Conway, T., Bonnardel, C., Serova, O., Torchard, D., Larsson, C., Vasen, H., Vanleeuwen, I., Cornelisse, C.J., Steel, M., Porter, D., Cohen, B.B., Carothers, A., Cannon-Albright, L.A., Goldgar, D., Skolnick, M., Becher, H., Johannsson, O., Weber, B., Collins, F., **Boehnke, M.**, Garber, J., and Li, F. (1995) An evaluation of genetic-heterogeneity in 145 breast-cancer ovarian-cancer families. *American Journal Of Human Genetics* 56:254-264.

76. Ho, P.P., Couch, F.J., Brody, L.C., Abel, K.J., Boehnke, M., Shearon, T.H., Chandrasekharappa, S.C., Collins, F.S., and Weber, B.L. (1995) Localization of the human homolog of the yeast cell division control 27 gene (CDC27) proximal to ITGB3 on human chromosome 17q21.3. *Somatic Cell and Molecular Genetics* 21:351-355.

77. Hulbert-Shearon, T., **Boehnke, M.**, and Lange, K. (1996) Lod score curves for phase-unknown matings. *Human Heredity* 46:55-57.

78. Hauser, E.R., **Boehnke, M.**, Guo, S.-W., and Risch, N. (1996) Affected-sib-pair interval mapping and exclusion for complex genetic traits: sampling considerations. *Genetic Epidemiology* 13:117-137.

79. Griffith, A.J., Burgess, D.L., Kohrman, D.C., Yu, J., Blaschak, J., Blanton, S.H., **Boehnke, M.**, Hecht, J.T., Overhauser, J., and Meisler, M.H. (1996) Localization of the homolog of a mouse craniofacial mutant to human chromosome 18q11 and evaluation of linkage to human CLP and CPO. *Genomics* 34:299-303.

80. Hou, Y.-C., Richards, J.E., Bingham, E.L., Pawar, H., Scott, K., Segal, M., Lunetta, K.L., **Boehnke, M.**, and Sieving, P.A. (1996) Linkage study of Best's Vitelliform Macular Dystrophy (VMD2) in a large North American family. *Human Heredity* 46:211-220.

81. Richards, J.E., Lichter, P.R., Herman, S., Hauser, E.R., Hou, Y.-C., Johnson, T., and **Boehnke, M.** (1996) Probable exclusion of GLC1A as a candidate glaucoma gene in a family with middle age onset primary open angle glaucoma. *Ophthalmology* 103:1035-1040.

82. Johnson, A.T., Richards, J.E., **Boehnke, M.**, Stringham, H.M., Herman, S.B., Wong, D.J., and Lichter, P.R. (1996) Clinical phenotype of juvenile-onset primary open-angle glaucoma linked to chromosome 1q. *Ophthalmology* 103:808-814.

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b) Publications pending

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123. Lange, E.M., and **Boehnke, M**. The haplotype runs test: I. The parent-parent-affected offspring trio design, submitted for publication.

c) Publications which have not received peer review

Boehnke, M., and Lange, K. (1984) Ascertainment and goodness of fit of variance component models for pedigree data, in *Genetic Epidemiology of Coronary Heart Disease Past, Present and Future*, edited by Rao, D.C., Elston, R.C., Kuller, L.H., Feinleib, M., Carter, C., and Havlik, R., Alan R. Liss, Inc., New York, pp. 173-192.

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c) Papers delivered at professional meetings

Boehnke, M., and Lange, K. Advances in likelihood calculation for human pedigree data. Refereed platform presentation: American Society of Human Genetics, Dallas, October 28-31, 1981. *American Journal of Human Genetics* 33:134A.

Boehnke, M., Lange, K., Conneally, P.M., and Goldman, D. A model of maternal transmission of a factor delaying age of onset in Huntington's disease. Refereed platform presentation: American Society of Human Genetics, Detroit, September 29-October 2, 1982. *American Journal of Human Genetics* 34:177A.

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Boehnke, M., and Lange, K. Variance components models for pedigree data: ascertainment and goodness of fit. Invited presentation: the Biometric Society ENAR meetings, Orlando, Florida, March 11-14, 1984. *Biometrics* 40:1185.

Boehnke, M. Combinatorial problems suggested by the use of DNA restriction fragment length polymorphisms in human genetics. Invited presentation: The Biometric Society ENAR meetings, Raleigh, North Carolina, March 24-27, 1985. *Biometrics* 41:572.

Boehnke, M., Sing, C.F., Moll, P.P., Weidman, W.H., and Kottke, B.A. Partitioning the variability of fasting plasma glucose levels in pedigrees. Genetic and environmental factors. Refereed platform presentation: Society for Epidemiologic Research, Chapel Hill, North Carolina, June 18-21, 1985.

Boehnke, M. Discussant for design and analysis of family studies. American Statistical Association meeting, Chicago, Illinois, August 21, 1986.

Boehnke, M., and Ploughman, L.M. Estimation of the power of a proposed linkage study: computer programs for simulation. Refereed poster presentation: American Society of Human Genetics meeting, Philadelphia, Pennsylvania, November 4, 1986. *American Journal of Human Genetics* 39:A148.

Boehnke, M., Moll, P.P., and Young, M.R. Sequential Sampling of Pedigrees Increases the Power to Detect a Major Locus in Complex Segregation Analysis. Refereed Platform

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Boehnke, M., Moll, P.P, and Young, M.R. Sequential sampling and statistical power in complex segregation analysis. Invited presentation: Joint Statistical Meetings, New Orleans, Louisiana, August 23, 1988.

Boehnke, M., and Moll, P.P. Identifying pedigrees segregating at a major locus for a quantitative trait: implications for linkage studies. Refereed poster presentation: American Society of Human Genetics meeting, New Orleans, Louisiana, October 12, 1989. *American Journal of Human Genetics* 43:A137.

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Boehnke, M. and Ploughman, L.M. Identifying influential individuals in a proposed linkage study. Refereed poster presentation: American Society of Human Genetics, Cincinnati, Ohio, October 16, 1990. *American Journal of Human Genetics* 47:A174.

Boehnke, M. Genetic Analysis Workshop 7: summary of the radiation hybrid mapping results. Invited platform presentation: American Society of Human Genetics, Cincinnati, Ohio, October 16, 1990.

Boehnke, M. and Lange, K. Fine structure chromosome mapping using radiation hybrids. Invited presentation: The Biometric Society ENAR meetings, Houston, Texas, March 25, 1991.

Boehnke, M. and Lange, K. Multipoint mapping of human chromosomes using radiation hybrids. Invited platform presentation: International Congress of Human Genetics, Washington, D.C., October 8, 1991.

Boehnke, M. Multipoint methods for radiation hybrid mapping. Invited presentation: linkage analysis of single gene and polygenic traits. INSERM, Paris, France, March 30, 1992.

Boehnke, M., and Lange, K. Constructing human gene maps using radiation hybrids. Invited presentation: genetic epidemiology of cancer: a multidisciplinary approach. National Cancer Institute, Bethesda, Maryland, April 30, 1992.

Boehnke, M., and Lange, K. Multipoint analysis for radiation hybrid mapping. Invited presentation: Sigrid Juselius Foundation Symposium, Helsinki, Finland, June 3, 1992.

Boehnke, M., and Lange, K. Constructing human gene maps using radiation hybrids. Invited platform presentation: Joint Statistical Meetings, Boston, Massachusetts, August 10, 1992.

Boehnke, M. Human gene mapping. Invited presentation: Gordon Conference on Quantitative Genetics and Biotechnology. Ventura, California, February 17, 1993.

Boehnke, M. Limits of resolution of human linkage studies: implications for the positional cloning of disease genes. Refereed platform presentation: American Society of Human

Genetics, New Orleans, Louisiana, October 9, 1993. *American Journal of Human Genetics* 53:263.

Boehnke, M. Limits of resolution of human linkage studies. Invited presentation: The Biometric Society ENAR meetings, Cleveland, Ohio, April 11, 1994.

Boehnke, M., Lange, K., and Cox, D.R. Statistical methods for diploid and polyploid radiation hybrid mapping of human chromosomes. Refereed platform presentation: Genome Mapping and Sequencing Meeting, Cold Spring Harbor, New York, May 14, 1994.

Boehnke, M. Mapping and exclusion of genes for complex traits: application to NIDDM. Invited presentation: Banbury Conference on Molecular Genetics of Diabetes, Cold Spring Harbor, New York, December 7, 1994.

Boehnke, M. Mapping genes for complex human diseases. Wellcome Trust Course on Human Gene Mapping, Oxford, United Kingdom, July 19, 1995.

Boehnke, M. Statistical methods for whole genome radiation hybrid mapping. Meeting on Methods for Gene Mapping, Tarrytown, New York, November 13, 1995.

Boehnke, M. Mapping genes for complex human diseases. Human Genome Lecture Series, National Center for Human Genome Research, Bethesda, Maryland, January 18, 1996.

Boehnke, M. Mapping genes for complex human diseases: application to adult-onset diabetes. Meeting on New Horizons in Genetics, Farmington Hills, Michigan, May 17, 1997.

Boehnke, M., and Langefeld, C.D. Association mapping based on discordant sib pairs. Meeting on Genetics of Diabetes, Ystad, Sweden, July 25, 1997.

Boehnke, M. The genetics of complex diseases. Meeting on the Future of Diabetes Research. Bethesda, Maryland, September 5, 1997.

Boehnke, M., and Langefeld, C.D. A transmission/disequilibrium test that uses both affected and unaffected offspring. Refereed poster presentation: American Society of Human Genetics, Baltimore, Maryland, October 29, 1997. *American Journal of Human Genetics* 61:1564.

Boehnke, M., Langfeld, C.D., Pericak-Vance, M.A., Saunders, A.M. Family-based tests for association using discordant sib pairs. The Biometric Society, ENAR meetings, Pittsburgh, Pennsylvania, March 29, 1998.

Boehnke, M. Linkage disequilibrium and human gene mapping. American Diabetes Association meeting on the Genetics of Diabetes, San Jose, California, October 19, 1999.

Boehnke, M. New developments in statistical methods for human gene mapping. US-Japan Symposium in the Cardiovascular Area, Honolulu, Hawaii, January 9, 2001.

CURRENT SPONSORED RESEARCH

"Design and Analysis of Human Gene Mapping Studies", National Human Genome Research Institute R01 HG00376, 9/1/98 - 8/31/2001, 50% effort, P.I. Michael Boehnke $418,108.

"Institutional Training Grant in Genomic Science", National Human Genome Research Institute, T32 HG00040, 7/1/00 - 6/30/2005, 5% effort, P.I. Michael Boehnke $1,932,942.

“Mapping Genes for Non-Insulin Dependent Diabetes Mellitus”, National Human Genome Research Institute, 04/01/01-09/30/03, 30% effort , P.I. Michael Boehnke $2,754,131.

“Consortium Linkage Studies of Type 2 Diabetes”, National Institute of Diabetes, Digestive, and Kidney Diseases, U01 DK 58026, 6/1/99 – 5/31/04, 5% effort, P.I. Nancy Cox, University of Chicago.

"Molecular Genetics of Primary Open-Angle Glaucoma", National Eye Institute, EY11671, 12/1/97 - 11/30/2002, 10% effort, P.I. Julia Richards.

“Mental Illness Research, Education, and Clinical Center (MIRECC)”, United States Department of Veterans Affairs, 10/1/99 – 9/30/01, 10% effort, P.I. Murray Raskind, University of Washington.

“Molecular Epidemiology of Colorectal Cancer”, National Cancer Institute, CA 81488, 01/01/99-12/31/04, 0% effort, P.I. Stephen Gruber.

“Software for Integrated Linkage and Association Analysis”, National Institute of Mental Health, R01 MH59528, 04/01/00 – 03/31/03, 5% effort, P.I. Elizabeth Hauser, Duke University.

PREVIOUSLY SPONSORED RESEARCH

"Linkage Studies in Neurofibromatosis", NIH NS23410, 4/1/86 - 3/31/89, 15% effort, P.I. Robert Erickson.

"Comparison of Fixed and Sequential Sampling for Family Studies", Rackham Faculty Research Grant, 1/5/87 - 12/31/87, 0% faculty effort, 35% GSRA effort, P.I. Michael Boehnke, $9,927.

"Alzheimer Disease Research Center", subcontract from the University of Washington, Seattle, Michigan P.I. Michael Boehnke, 5/1/87 - 12/31/87, 20% effort.

"Michigan Diabetes Research and Training Center", 9/1/87 - 8/31/89, 10% effort, P.I. Douglas Greene.

"Program Project: The Study of Human Mutation", NIH CA26803, 12/1/87 - 11/30/90, 10% effort, P.I. Samir Hanash.

"Design Issues in Genetic Linkage and Segregation Studies", NIH R29 HG00376, 9/28/88 - 8/31/93, 50% effort, P.I. Michael Boehnke $349,752.

"Macular Genetic Studies of Human X-Chromosomal Retinal Dystrophies", Retinitis Pigmentosa Foundation, 10/1/88 - 6/30/91, 5% effort, P.I. Paul Sieving.

"The Effects of Bilineal Pedigrees in Linkage Analysis", MacArthur Foundation, 3/1/90 - 2/28/91, P.I. Michael Boehnke $11,369.

"Two-Trait Locus Models for Linkage Analysis of Complex Traits", MacArthur Foundation, 5/1/91 - 12/31/91, 0% effort, P.I. Michael Boehnke $7,024.

"Efficient Use of Two-Trait Linkage Analysis", MacArthur Foundation, 6/1/92 - 5/31/93, 0% effort, P.I. Michael Boehnke $12,800.

"Linkage Studies in Neurofibromatosis", NIH R01 NS23410, 4/1/89 - 3/31/94, 5% effort, P.I. Francis Collins.

"Genomic Technology and Genetic Disease", Statistical Genetics Core, 9/30/90 - 7/31/95, 15% effort, P.I. (Core) Michael Boehnke, P.I. (Center) Francis Collins and Miriam Meisler.

"Retinitis Pigmentosa Research Center", National Retinitis Pigmentosa Foundation, 7/1/91 - 6/30/94, 5% effort.

"Molecular Genetics of Juvenile Onset Glaucoma", National Eye Institute, R01 EY09580, 9/30/92 - 9/29/95, 10% effort, P.I. Julia Richards.

"Mapping Genes for Type 2 Diabetes", supplement to "Genomic Technology and Genetic Disease", NIH, NCHGR P30 HG00209, 6/1/94-7/31/95, 15% effort, P.I. (Supplement) Michael Boehnke, P.I. (Center) Miriam Meisler $111,415.

"Design and Analysis of Human Gene Mapping Studies", National Human Genome Research Institute R01 HG00376, supplement, 9/1/95 - 8/31/98, 15% effort, P.I. Michael Boehnke $310,535.

"FUSION: Statistical Analysis and Database Support", National Human Genome Research Institute, 5/1/97 - 8/31/98, 0% effort, P.I. Michael Boehnke, $139,306.

"Public Health Genetics: An Education Model", National Human Genome Research Institute, HG01511, 12/09/96 - 11/30/99, 5% effort (no salary), P.I. Susan Caumartin.

"FUSION: Statistical Analysis and Database Support", National Human Genome Research Institute, 10/1/98 - 9/30/99, 15% effort, P.I. Michael Boehnke, $286,984.

"Isolation of the Gene(s) for Ataxia-Telangiectasia", National Cancer Institute, R01 CA57569, 4/1/97 - 3/31/2000, 2% effort, P.I. Patrick Concannon, Virginia Mason Research Center.

"Institutional Training Grant in Genomic Science", National Human Genome Research Institute, T32 HG00040, 7/1/95 - 6/30/2000, 5% effort (no salary), P.I. Michael Boehnke $1,163,746.

“FUSION: Statistical Analysis and Database Support”, National Human Genome Research Institute, 5/1/97 - 12/31/2000, 15% effort, P.I. Michael Boehnke $282,321.

"Molecular Genetics of Juvenile Onset Glaucoma", National Eye Institute, R01 EY09580, 12/8/95 - 11/30/2000, 10% effort, P.I. Julia Richards.

TEACHING

Introduction to Biostatistics: 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1995, 1997, 2000. Textbook: W. Mendenhall, R.J. Beaver, and B.M. Beaver, *Introduction to Probability and Statistics*, 10th ed.

Foundations of Biostatistical Inference: 1984, 1985, 1986
Textbook: B. Lindgren, *Statistical Theory*, 3rd ed.

Statistical Models and Numerical Methods in Human Genetics: 1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999.

Introduction to Applied Stochastic Processes: 1986
Textbook: H.M. Taylor and S. Karlin, *Introduction to Stochastic Modeling*.

Introduction to Mathematical Modeling in Clinical Research: 1986, 1988

Statistical Computer Packages: 1987

Readings in Statistical Human Genetics: 1992, 1996, 1997, 1998, 2000.

Advanced Topics in Genetic Modeling: 1999, 2003
Textbook: K. Lange, *Mathematical and Statistical Models for Genetic Analysis*.

DOCTORAL COMMITTEE SERVICE

Daniel J. Odenheimer, Department of Epidemiology, 1985. "An Evaluation of the Validity of Complex Segregation Analysis in Identifying an Individual's Genotype at a Major Locus."

Ann R. G. Schwartz, Department of Epidemiology, 1986. "A New Method for Detecting Familial Heterogeneity of Cancer Risk: A Population-Based Study in Metropolitan Detroit."

Lynn M. Ploughman, Department of Biostatistics, 1990. Chair. "Linkage Analysis: Power Estimation and Comparison of Methods."

Mark Graves, Department of Electrical Engineering and Computer Science, 1994. "Theories and Tools for Designing Application-Specific Knowledge Base Data Models."

Nicholas Schork, Department of Epidemiology, 1994. Co-Chair. "Advances in the Genetic-Epidemiologic Analysis of Complex Phenotypes."

Kim Papenberg, Department of Human Genetics, 1995. “Hereditary Hemorrhagic Telangiectasia: From Linkage to Mutation Analysis."

Kathryn Lunetta, Department of Biostatistics, 1996. Chair. "Models and Experimental Design for Radiation Hybrid Mapping."

Benjamin Rybicki, Department of Epidemiology, 1997. "Genetic Epidemiology of Sarcoidosis."

Elizabeth Hauser, Department of Biostatistics, 1998. Chair. "Methods for Linkage Analysis of Complex Genetic Disease."

Ruzong Fan, Department of Biostatistics, 1998. "Mathematical and Statistical Models for Mutant Genes in Nonstationary Populations."

George J. Papanicolaou, Department of Human Genetics, 1999. "Genotypic and Phenotypic Analysis of Malignant Melanoma: Analysis of Gene Expression Patterns".

Carl Langefeld, Department of Biostatistics, 1999. Chair. "The Application of Statistical Methods for Highly Stratified Data to Linkage and Association Analysis of Complex Genetic Traits."

Heather Stringham, Department of Biostatistics, 2000. Chair. "Bayesian Solutions to Problems of Uncertainty in Genetic Data."

Leslie Lange, Department of Epidemiology, 2000. "Identification and Analysis of Candidate Genes for Coronary Artery Calcification."

Anne V. Jackson, Department of Human Genetics, 2000. "A Mouse Model System for Quantitative Genetics of Age-Sensitive Traits."

Ethan M. Lange, Department of Biostatistics, 2001. Chair. "Methods for Mapping Disease Susceptibility Genes Using Allele-Sharing Statistics."

Julie A. Douglas, Department of Biostatistics, 2001. Chair. "Methods for Resolving Genotype and Haplotype Ambiguity in Human Genetic Data."

Mohammad Khoshnevisan, Department of Epidemiology, 2001. "Selected Genetic and Environmental Risk Factors in the Ecology of Human Oral Clefting."

Michael P. Epstein, Department of Biostatistics, 2002. Co-Chair. "Statistical Methods in Gene Mapping of Familial Traits."

Chun Li, Department of Biostatistics, 2003. Chair. "Association Methods for Mapping Genes for Complex Diseases."

Tasha Fingerlin, Department of Epidemiology, Co-Chair.

Andrew Skol, Department of Biostatistics, Chair.

Mingyao Li, Department of Biostatistics, Chair.

Cathy Bock, Department of Epidemiology.

Albert Levin, Department of Epidemiology.

Bethany Niell, Department of Epidemiology.

Laura Rozek, Department of Epidemiology.

OTHER STUDENT RESEARCH SUPERVISION

Kirk Tarlo, Department of Environmental and Industrial Health
Martin Young, Department of Biostatistics
Jane Olson, Department of Biostatistics
Jennifer Kwon, Department of Epidemiology
Jill VanderStoep, Department of Biostatistics
Justine Uro, Department of Biostatistics
Tempie Hulbert-Shearon, Department of Biostatistics

PROFESSIONAL SERVICE

Associate Editor:

American Journal of Human Genetics	1989-1991
Human Heredity	1992-present
Journal of the American Statistical Association	1993-present

Editorial Advisory Board:

Genome Research	1995-1999
Genetic Epidemiology	1997-present

Referee for:

American Journal of Human Genetics
Annals of Statistics
Annals of Thoracic Surgery
Bioinformatics
Biological Psychiatry
Biometrics
Cell
Cephalalgia
Communications in Statistics
Diabetes
Diabetologia
Genetic Epidemiology
Genetics
Genome Research
Genomics
Human Genetics
Human Heredity
Human Molecular Genetics
Journal of Clinical Endocrinology and Metabolsim
Journal of Clinical Investigation
Journal of Heredity
Journal of the American Statistical Association
Molecular Biology and Evolution
Molecular Medicine
Nature
Nature Genetics
Nature Medicine

Proceedings of the National Academy of Sciences
Science
Theoretical and Applied Genetics

Grant Review

Member, Mammalian Genetics Study Section, 1994 - 1997.

Member, Center for Inherited Disease Research (CIDR) Access Committee, 1997 – 2002.

Member, NIGMS Human Mutant Cell Repository Advisory Committee, 1998 - 2001.

Other:

Co-Organizer (with Nancy Cox) of International Type 2 Diabetes Linkage Analysis Consortium. Chair, Steering Committee. Member, Analysis and Mapping Committee. September 1997 - present.