

## CURRICULUM VITAE

**Name:** David M. Umbach

**Citizenship:** United States of America

### Education:

|      |  |                             |                                   |
|------|--|-----------------------------|-----------------------------------|
| 1992 | Ph.D.  | Biometry (minor Statistics) | Cornell University                |
| 1983 | M.S.   | Ecology (minor Statistics)  | The Pennsylvania State University |
| 1970 | B.A.   | Physics and Philosophy      | Yale University                   |
| 1973 | Teaching Certificate in Secondary School Science and Mathematics (New Jersey) via continuing education |                             | Temple University, Rider College  |

### Brief Chronology of Employment:

|              |  |
|--------------|--|
| 1992-present | Staff Fellow/Senior Staff Fellow/Investigator (Tenure Track)/Staff Scientist, Biostatistics and Computational Biology Branch (formerly, Biostatistics Branch) National Institute of Environmental Health Sciences. |
| 1990-1991    | Lecturer, Cornell University, Ithaca, NY.  |
| 1981-1989    | Teaching or Research Assistant, Cornell University, Ithaca, NY.  |
| 1977-1981    | Research Assistant, Center for Air-Environment Studies, The Pennsylvania State University, University Park, PA.  |
| 1970-1975    | Secondary School Mathematics Teacher, Willingboro School District, Willingboro, NJ.  |

### Professional Memberships:

American Statistical Association  
Biometric Society, Eastern North American Region  
Institute of Mathematical Statistics  
International Genetic Epidemiological Society

### Honors and Other Special Scientific Recognition:

Fellow of the American Statistical Association, named 2009.  
Mathematical Sciences Institute Graduate Fellowship, Cornell University, 1986-87.  
Sage Graduate Fellowship, Cornell University, 1985-86.  
Mu Sigma Rho, National Statistical Honor Society, elected 1983.  
Garden Club of America Graduate Scholarship, 1981-82.  
National Merit Scholarship, 1966-70.

### Service within the NIEHS:

Invited participant, EPA/NIEHS workshop *Applying Biomarker Research*, 30-31 August 1999, Chapel Hill, NC.  
Invited participant, NIEHS/NIH workshop *Epidemiology in the 21<sup>st</sup> Century*, November, 1999, Raleigh, NC.

Invited participant, NIEHS workshop, *Respiratory Disease in the Agricultural Health Study*, 3-4 February 2003, Research Triangle Park, NC.

Member, NIEHS National Center for Toxicogenomics, Toxicology/Pathology Working Group, 2002-2006.

*Ad hoc* statistical reviewer of clinical proposals for the NIEHS IRB, 2002-2010.

Member, NIEHS Science Review Committee, 2003-2006.

Facilitator for weekly Bioinformatics/Statistical Genetics discussion within the Biostatistics and Computational Biology Branch (formerly Biostatistics Branch), 2005-ongoing.

Member, IRB Stakeholders Steering Committee, 2007.

Member, Technical Review Panel for contract "Statistical Support for NIEHS/NTP," 2010.

Invited participant, NIEHS Stakeholder Community Workshop for Strategic Planning, 12-14 July 2011.

Member, GuLF Study Statistician Search Committee, Epidemiology Branch, 2011.

Coordinator, Biostatistics and Computational Biology Branch (formerly Biostatistics Branch) seminar series, 2013-ongoing.

### **Professional Activities:**

Associate Editor, *Journal of the American Statistical Association*, 1996-99.

Representative to Council of Sections, Section on Statistics and the Environment, American Statistical Association (elected), 2000-2002.

Member, Expert Panel for Review of Soy Formula and Genistein, National Toxicology Program, Center for the Evaluation of Risks to Human Reproduction, DHHS, September 2005 through March 2006.

Treasurer/Secretary, Section on Statistics and the Environment, American Statistical Association, (elected) 2007-2008.

Member, Data Safety Monitoring Board for clinical trial entitled "Double-blind, placebo controlled, randomized, multicenter pilot study on the safety and efficacy of ciprofloxacin for prophylactic prevention of postoperative endoscopic recurrence in Crohn's disease patients," PI: Hans Herferth, MD, UNC School of Medicine, 2008-2011.

*Ad hoc* external grant reviewer for Environmental Exposures & Health Initiative of the Natural Environment Research Council, United Kingdom, 2010.

External reviewer for National Academy of Sciences, Institute of Medicine, report: "Breast Cancer and the Environment, A Life Course Approach," August, 2011.

Guest Editor, *Journal of the Indian Society of Agricultural Statistics*, volume 67(2), 2013.

Representative for the Institute of Mathematical Statistics on the Current Index to Statistics Management Committee (appointed), term 2014-2016.

*Ad hoc* referee/reviewer for a variety of journals including since 2000: *American Journal of Epidemiology*, *American Journal of Human Genetics*, *Annals of Epidemiology*, *Annals of Human Genetics*, *Bioinformatics*, *Biometrics*, *Biometrika*, *BMC-Bioinformatics*, *BMC Genetics*, *Cancer Epidemiology Biomarkers and Prevention*, *Environmental Health Perspectives*, *Epidemiology*, *Environmental and Molecular Mutagenesis*, *Genetic Epidemiology*, *Heredity*, *Human Heredity*, *International Journal of Epidemiology*, *International Journal of Molecular and Genetic Epidemiology*, *Journal of the American Statistical Association*, *Journal of Biological Optics*, *Perinatal and Pædiatric Epidemiology*, *Pharmacogenetics*, *Physiological Genomics*, *Statistics in Medicine*.

## PEER-REVIEWED PUBLICATIONS

1. Davis DD, **Umbach DM**, Coppolino JB. Susceptibility of tree and shrub species and response of black cherry foliage to ozone. *Plant Disease* 1981; 65: 904-907.
2. **Umbach DM**, Davis DD, Pennypacker SP. A comparison of several dose-response models based on laboratory exposures of tree seedlings to sulfur dioxide. *Journal of the Air Pollution Control Association* 1983; 33: 1073-1079.
3. **Umbach DM**, Davis DD. Severity and frequency of SO<sub>2</sub>-induced leaf necrosis on seedlings of 57 tree species. *Forest Science* 1984; 30: 587-596.
4. **Umbach DM**, Davis DD. Severity of SO<sub>2</sub>-induced leaf necrosis on Caribbean, Scots, and Virginia pine seedlings. *Journal of the Air Pollution Control Association* 1986; 36: 1019-1021.
5. **Umbach DM**, Davis DD. The influence of humidity and temperature during exposure on SO<sub>2</sub>-induced leaf necrosis on Virginia pine and river birch. *Canadian Journal of Forest Research* 1987; 17: 1213-1218.
6. Koslowski B, Okagaki L, Lorenz C, **Umbach D**. When covariation is not enough: the role of causal mechanism, sampling method, and sample size in causal reasoning. *Child Development* 1989; 60: 1316-1327.
7. Specker DR, Shields EJ, **Umbach DM**, Allen SA. Mortality response of potato leafhopper (Homoptera: Cicadellidae) to low temperatures: implications for predicting overwintering and early migrant mortality. *Journal of Economic Entomology* 1990; 83(4): 1541-1548.
8. Rubin G, **Umbach D**, Shyu S-F, Castillo-Chavez C. Using capture-recapture methodology to estimate the size of a population at risk for AIDS and other sexually transmitted diseases. *Statistics in Medicine* 1992; 11:1533-1549. PMID: 1439360. (also available as BU-1112-M in the Biometrics Unit Technical Report Series, Cornell University, Ithaca, NY 14853.)
9. Weinberg CR, **Umbach DM**, Greenland S. When will nondifferential misclassification of an exposure preserve the direction of a trend? *American Journal of Epidemiology* 1994; 140(6): 565-571. PMID: 8067350.
10. Baird DD, **Umbach DM**, Lansdell L, Hughes C, Setchell K, Weinberg CR, Haney AF, Wilcox AJ, McLachlan JA. Lack of estrogenic effects in postmenopausal women eating a soy diet. *Journal of Clinical Endocrinology and Metabolism* 1995; 80: 1685-1690. PMID: 7745019.
11. Manasco PK, **Umbach DM**, Muly SM, Godwin DC, Negro-Vilar A, Culler MD, Underwood LE. Ontogeny of gonadotropin, testosterone, and inhibin secretion in normal boys through puberty based on overnight serial sampling. *Journal of Clinical Endocrinology and Metabolism* 1995; 80: 2046-2052. PMID: 7608253.
12. Bell DA, Stephens E, Castranio T, **Umbach DM**, Watson M, Deakin M, Elder J, Duncan H, Hendrickse C, Strange RC. Polyadenylation polymorphism in the N,O-acetyltransferase gene (NAT1) increases risk of colorectal cancer. *Cancer Research* 1995; 55: 3537-3542. PMID: 7627961.
13. Wilcox AJ, **Umbach DM**, Hornsby PP, Herbst AL. Age at menarche among DES granddaughters. *American Journal of Obstetrics and Gynecology* 1995; 173: 835-836. PMID: 7573253.
14. **Umbach DM**, Wilcox AJ. A technique for measuring epidemiologically useful features of birthweight distributions. *Statistics in Medicine* 1996; 15: 1333-1348. PMID: 8841645.
15. Weinberg CR, Moledor ES, **Umbach DM**, Sandler DP. Imputation for exposure histories with gaps under an excess relative risk model. *Epidemiology* 1996; 7: 490-497. PMID: 8862979.

16. Cooper GS, **Umbach DM**. Are vitamin D receptor polymorphisms associated with bone mineral density? a meta-analysis. *Journal of Bone and Mineral Research* 1996; 11:1841-1849. PMID: 8970884.
17. **Umbach DM**, Weinberg CR. Designing and analyzing case-control studies to exploit independence of genotype and exposure. *Statistics in Medicine* 1997;16:1731-1743. PMID: 9265696.
18. Manasco PK, **Umbach DM**, Muly SM, Godwin DC, Negro-Vilar A, Culler MD, Underwood LE. Ontogeny of gonadotropin and inhibin secretion in normal girls through puberty based on overnight serial sampling and a comparison to normal boys. *Human Reproduction* 1997; 12:2108-2114. PMID: 9402263.
19. Taylor JA, **Umbach DM**, Stephens E, Castranio T, Paulson D, Robertson C, Mohler J, Bell DA. The role of N-acetylation polymorphisms in smoking-associated bladder cancer: evidence of a gene-gene-exposure 3-way interaction. *Cancer Research* 1998; 58: 3603-3610. PMID: 9721868.
20. Tseng M, Weinberg CR, **Umbach DM**, Longnecker MP. Calculation of population attributable risk for alcohol and breast cancer (United States). *Cancer Causes and Control* 1999; 10:119-123. PMID: 10231160.
21. Weinberg CR, **Umbach DM**. Using pooled exposure assessment to improve efficiency in case-control studies. *Biometrics* 1999; 55(3):152-160. PMID: 11314998.
22. Kamel F, **Umbach DM**, Munsat TL, Shefner JM, Sandler DP. Association of cigarette smoking with amyotrophic lateral sclerosis. *Neuroepidemiology* 1999; 18:194-202. PMID: 10364720.
23. Monks SA, Martin ER, **Umbach DM**, Kaplan NL. Two tests of association for a susceptibility locus for families of variable size: an example using two sampling strategies. In: Goldin L, Amos CI, Chase GA, Goldstein AM, Jarvik GP, Martinez MM, Suarez BK, Weeks DW, Wijsman EM, MacCluer JW, eds. Genetic Analysis Workshop 11: Analysis of genetic and environmental factors in common diseases. *Genetic Epidemiology* 1999; 17 (Suppl 1): S655-S660. PMID: 10597509.
24. **Umbach DM**. Unit conversion as a source of misclassification in U.S. birthweight data. *American Journal of Public Health* 2000; 90:127-129. PMID: 10630152. PMCID: 1446123.
25. Blazer DG, **Umbach DM**, R.M. Bostick RM, Taylor JA. Vitamin D receptor polymorphisms and prostate cancer. *Molecular Carcinogenesis* 2000; 27:18-23. PMID: 10642433.
26. **Umbach DM**, Weinberg CR. The use of case-parent triads to study the joint effects of genotype and exposure. *American Journal of Human Genetics* 2000; 66:251-161. PMID: 10631155. PMCID: 1288330.
27. Lunn RM, Helzlsouer KJ, Parshad R, **Umbach DM**, Harris E, Sanford KK, Bell DA. XPD polymorphisms: effects on DNA repair proficiency. *Carcinogenesis* 2000; 21:551-555. PMID: 10753184.
28. Longnecker MP, Kamel F, **Umbach DM**, Munsat TL, Shefner JM, Lansdell LW, Sandler DP. Dietary intake of calcium, magnesium, and antioxidants in relation to risk of amyotrophic lateral sclerosis. *Neuroepidemiology* 2000; 19:210-216. PMID: 10859501.
29. Weinberg CR, **Umbach DM**. Choosing a retrospective design to assess joint genetic and environmental contributions to risk. *American Journal of Epidemiology* 2000; 152:197-203. PMID: 10933265.
30. Boissy RJ, Watson MA, **Umbach DM**, Deakin M, Elder J, Duncan H, Strange RC, Bell DA. A pilot study investigating the role of *NAT1* and *NAT2* polymorphisms in gastric adenocarcinoma. *International Journal of Cancer* 2000; 87:507-511. PMID: 10918189.

31. Stern MC, **Umbach DM**, van Gils C, Lunn RM, Taylor JA. DNA repair gene XRCC1 polymorphisms, smoking, and bladder cancer risk. *Cancer Epidemiology Biomarkers and Prevention* 2001; 10:125-131. PMID: 11219769.
32. Stern MC, **Umbach DM**, Yu MC, London SJ, Zhang Z-Q, Taylor JA. Hepatitis B, aflatoxin B<sub>1</sub>, and p53 codon 249 mutation in hepatocellular carcinomas from Guangxi, PRC, and a meta-analysis of existing studies *Cancer Epidemiology Biomarkers and Prevention* 2001; 10:617-625. PMID: 11401911.
33. Rowland AS, **Umbach DM**, Catoe KE, Stallone L, Long S, Rabiner D, Naftel AJ, Panke D, Faulk R, Sandler DP. Studying the epidemiology of attention-deficit/hyperactivity disorder: screening method and pilot results. *Canadian Journal of Psychiatry* 2001; 46:931-940. PMID: 11816314.
34. Rowland AS, **Umbach DM**, Stallone L, Naftel AJ, Bohlig EM, Sandler DP. Prevalence of medication treatment for attention-deficit/hyperactivity disorder (ADHD) among elementary school children in Johnston County, NC. *American Journal of Public Health* 2002; 92: 231-234. PMID: 11818297. PMCID: 1447048.
35. Hoppin JA, **Umbach DM**, London SJ, Alavanja MCR, Sandler DP. Chemical predictors of wheeze among farmer applicators in the Agricultural Health Study. *American Journal of Respiratory and Critical Care Medicine* 2002; 165: 683-689. PMID: 11874814.
36. Kamel F, **Umbach DM**, Hu H, Munsat TL, Shefner JM, Sandler DP. Lead exposure and amyotrophic lateral sclerosis (ALS). *Epidemiology* 2002; 13:311-319. PMID: 11964933.
37. Stern MC, **Umbach DM**, Lunn RM, Taylor JA. DNA repair gene XRCC3 codon 241 polymorphism, its interaction with smoking and XRCC1 polymorphisms in bladder cancer risk. *Cancer Epidemiology Biomarkers and Prevention* 2002; 11:939-943. PMID: 12223443.
38. Slebos RJC, Oh DS, **Umbach DM**, Taylor JA. Mutations in tetranucleotide repeats following DNA damage depend on repeat sequence and carcinogenic agent. *Cancer Research* 2002; 62:6052-6060. PMID: 12414628.
39. Peddada SD, Lobenhofer EK, Li L, Afshari CA, Weinberg CR, **Umbach DM**. Gene selection and clustering for time-course and dose-response microarray experiments using order restricted inference. *Bioinformatics* 2003; 19:834-841. PMID: 12724293.
40. Hoppin JA, **Umbach DM**, London SJ, Alavanja MCR, Sandler DP. Animal production and wheeze in the Agricultural Health Study: interactions of atopy, asthma, and smoking. *Occupational and Environmental Medicine* 2003; 60:e3 (electronically published with URL <http://www.occenvmed.com/cgi/content/full/60/8/e3>). PMID: 12883030. PMCID: 1740584.
41. Kamel F, **Umbach DM**, Lehman TA, Park LP, Munsat TL, Shefner JM, Sandler DP, Hu H, Taylor JA. Amyotrophic lateral sclerosis, lead, and genetic susceptibility:  $\delta$ -aminolevulinic acid dehydratase and vitamin D receptor genes. *Environmental Health Perspectives* 2003; 111:1335-1339. PMID: 12896855. PMCID: 1241615.
42. Slebos RJC, Little RE, **Umbach DM**, Zadaorozhnaja TD, Mendel NA, Antipkin Y, Sommer CA, Conway K, Parrish E, Gulino S, Taylor JA. Mini- and Microsatellite mutations in children from Chernobyl accident cleanup workers. *Mutation Research* 2004; 559:143-151. PMID: 15066582.
43. Slebos RJC, **Umbach DM**, Sommer CA, Horner GA, Choi J, Taylor JA. Analytical and statistical methods to evaluate microsatellite allelic imbalance in small amounts of DNA. *Laboratory Investigation* 2004; 84:649-657. PMID: 15048133.
44. Liu D, **Umbach DM**, Peddada SD, Li L, Crockett P, Weinberg CR. A random-periods model for expression of cell-cycle genes. *Proceedings of the National Academy of Sciences* 2004; 101:7240-7245. PMID: 15123814. PMCID: 409903.

45. Li L, **Umbach DM**, Terry P, Taylor JA. Application of the GA/KNN method to SELDI proteomics data analysis. *Bioinformatics* 2004; 20:1638-1640. PMID: 14962943.
46. Kirrane EF, Hoppin JA, **Umbach DM**, Samanic C, Sandler DP. Patterns of pesticide use and their determinants among wives of farmer pesticide applicators in the Agricultural Health Study. *Journal of Occupational and Environmental Medicine* 2004; 46:856-865. PMID: 15300138.
47. Hoppin JA, **Umbach DM**, London SJ, Alavanja MCR, Sandler DP. Diesel exhaust, solvents, and other occupational exposures as risk factors for wheeze among farmers. *American Journal of Respiratory and Critical Care Medicine* 2004; 169:1308-1313. PMID: 15070818.
48. Terry PD, Kamel F, **Umbach DM**, Lehman TA, Hu H, Sandler DP, Taylor JA. VEGF promoter haplotype and amyotrophic lateral sclerosis (ALS). *Journal of Neurogenetics* 2004; 18:429-434. PMID: 15763997.
49. Weinberg CR, **Umbach DM**. A hybrid design for studying genetic influences on risk of diseases with early onset in life. *American Journal of Human Genetics* 2005; 77:627-636. PMID: 16175508. PMCID: 1275611.
50. Kirrane EF, Hoppin JA, Kamel F, **Umbach DM**, Boyes WK, DeRoos A, Alavanja M, Sandler DP. Retinal degeneration and other eye disorders in wives of farmer pesticide applicators enrolled in the Agricultural Health Study. *American Journal of Epidemiology* 2005; 161:1020-1029. PMID: 15901622.
51. Terry P, **Umbach DM**, Taylor JA. No association between SOD2 or NQO1 genotypes and risk of bladder cancer. *Cancer Epidemiology, Biomarkers and Prevention* 2005; 14:753-754. PMID: 15767364.
52. Kamel F, **Umbach DM**, Hu H, Munsat TL, Shefner JM, Taylor JA, Sander DP. Lead Exposure as a Risk Factor for Amyotrophic Lateral Sclerosis (ALS). *Neurodegenerative Diseases* 2005; 2 (3-4):195-201. PMID: 16909025.
53. Terry P, **Umbach DM**, Taylor JA. APE1 genotype and risk of bladder cancer: evidence for effect modification by smoking. *International Journal of Cancer*. 2006; 118:3170-3173. PMID: 16425270.
54. Shaughnessy DT, Schaaper R, **Umbach DM**, DeMarini DM. Inhibition of spontaneous mutagenesis by vanillin and cinnamaldehyde in *Escherichia coli*: dependence on recombinational repair. *Mutation Research* 2006; 602:54-64. PMID: 16999979. PMCID: 2099251.
55. Rozman KK, Bhatia J, Calafat AM, Chambers C, Culty M, Etzel RA, Flaws JA, Hansen DK, Hover PB, Jeffery EH, Kesner JS, Marty S, Thomas JA, **Umbach D**. NTP-CERHR Expert Panel Report on the reproductive and developmental toxicity of genistein. *Birth Defects Research, Part B. Developmental and Reproductive Toxicology* 2006; 77:485-638. PMID: 17186522. PMCID: 2020434.
56. Rozman KK, Bhatia J, Calafat AM, Chambers C, Culty M, Etzel RA, Flaws JA, Hansen DK, Hover PB, Jeffery EH, Kesner JS, Marty S, Thomas JA, **Umbach D**. NTP-CERHR Expert Panel Report on the reproductive and developmental toxicity of soy formula. *Birth Defects Research, Part B. Developmental and Reproductive Toxicology* 2006; 77:280-397. PMID: 16998908. PMCID: 2286894.
57. Huang W, **Umbach DM**, Li L. Accurate anchoring alignment of divergent sequences. *Bioinformatics* 2006; 22:29-34. PMID: 16301203.
58. Huang W, **Umbach DM**, Ohler U, Li L. Optimized mixed Markov models for motif identification. *BMC Bioinformatics* 2006, 2 June; 7:279. PMID: 16749929. PMCID: 1534070.

59. Hoppin JA, **Umbach DM**, London SJ, Lynch CF, Alavanja MCR, Sandler DP. Pesticides associated with wheeze among commercial pesticide applicators in the Agricultural Health Study. *American Journal of Epidemiology* 2006; 163:1129-1137. PMID: 16611668.
60. Foley JF, Collins JB, **Umbach DM**, Grissom S, Boorman GA, Heinloth, AN. Optimal sampling of rat liver tissue for toxicogenomics studies. *Toxicological Pathology* 2006; 34:795-801. PMID: 17162537. PMCID: 2131763.
61. Yim HW, Slebos RJC, Randell SH, **Umbach DM**, Rivera MP, Detterbeck FC, Taylor JA. Smoking is associated with increased telomerase activity in short-term cultures of human bronchial epithelial cells. *Cancer Letters* 2007; 246:24-33. PMID: 16517060.
62. Weinberg CR, Shore D, **Umbach DM**, Sandler DP. Using risk-based sampling to enrich cohorts for endpoints, genes, and exposures. *American Journal of Epidemiology* 2007; 166:447-455. PMID: 17556763. PMCID: 2077981.
63. Valcin M, Henneberger PK, Kullman GJ, **Umbach DM**, London SJ, Alavanja MCR, Sandler DP, Hoppin JA. Chronic bronchitis among non-smoking farm women in the Agricultural Health Study. *Journal of Occupational and Environmental Medicine* 2007; 49:574-583. PMID: 17495700. PMCID: 2074236.
64. Shi M, **Umbach DM**, Weinberg CR. Identification of risk-related haplotypes using multiple linked SNPs from nuclear families. *American Journal of Human Genetics* 2007; 81(1):53-66. PMID: 17564963. PMCID: 1950926.
65. Monti P, Ciribilli Y, Jordan J, Menichini P, **Umbach DM**, Resnick MA, Luzzato L, Inga A, Fronza G. Transcriptional functionality of germline p53 alleles influences cancer phenotype. *Clinical Cancer Research* 2007; 13:3789-95. PMID: 17606709. PMCID: 2128783.
66. King AA, Shaughnessy DT, Mure K, Leszczynska J, Ward WO, **Umbach DM**, Xu Z, Ducharme D, Taylor JA, DeMarini DM, Klein CB. Antimutagenicity of cinnamaldehyde and vanillin in human cells: global gene expression possible role of DNA damage and repair. *Mutation Research* 2007; 616:60-69. PMID: 17178418. PMCID: 1955325.
67. Kamel F, Tanner CM, **Umbach DM**, Hoppin JA, Alavanja MCR, Blair A, Comyns K, Goldman SM, Korell M, Langston JW, Ross GW, Sandler DP. Pesticide exposure and self-reported Parkinson's Disease in the Agricultural Health Study. *American Journal of Epidemiology* 2007; 165: 364-375. PMID: 17116648.
68. Hoppin JA, **Umbach DM**, Kullman GJ, Henneberger PK, London SJ, Alavanja MCR, Sandler DP. Pesticides and other agricultural factors associated with self-reported farmer's lung among farm residents in the Agricultural Health Study. *Occupational and Environmental Medicine* 2007; 64:334-341. PMID: 17182642. PMCID:1945110.
69. Chen H, Richards M, Sandler DP, **Umbach DM**, Kamel F. Head injury and amyotrophic lateral sclerosis. *American Journal of Epidemiology* 2007; 166:810-816. PMID: 17641152. PMCID: 2239342.
70. Rowland AS, **Umbach DM**, Bohlig M, Stallone L, Sandler DP. Modifying the response labels of an ADHD teacher rating scale: psychometric and epidemiologic implications. *Journal of Attention Disorders* 2007; 11:384-397. PMID: 17932388.
71. Swartz CD, Parks N, **Umbach DM**, Ward WO, Schaaper RM, DeMarini, DM. Enhanced mutagenesis of *Salmonella* tester strains due to deletion of genes other than *uvrB*. *Environmental and Molecular Mutagenesis* 2007; 48:694-705. PMID: 17896788.
72. Hoppin JA, Valcin M, Henneberger PK, Kullman GJ, **Umbach DM**, London SJ, Alavanja MCR, Sandler DP. Pesticide use and chronic bronchitis among farmers in the Agricultural Health Study. *American Journal of Industrial Medicine* 2007; 50:969-979. PMID: 17975796. PMCID: 2806052.

73. Hoppin JA, **Umbach DM**, London SJ, Henneberger PK, Kullman GJ, Alavanja MCR, Sandler DP. Pesticide exposure and atopic and non-atopic asthma among farm women in the Agricultural Health Study. *American Journal of Respiratory and Clinical Care Medicine*. 2008; 177:11-18. PMID: 17932376. PMCID: 2176117.
74. Bernbaum JC, **Umbach DM**, Ragan NB, Ballard JL, Archer J, Schmidt-Davis H, Rogan WJ. Pilot studies of sex estrogen-related physical findings in infants. *Environmental Health Perspectives* 2008; 116:416-420. PMID: 18335112. PMCID: 2265408.
75. Rowland AS, Skipper B, Rabiner DL, **Umbach DM**, Stallone L, Campbell RA, Hough RL, Naftel AJ, Sandler DP. The shifting subtypes of ADHD: classification depends on how symptom reports are combined. *Journal of Abnormal Child Psychology* 2008; 36:731-743. PMID: 18347973. PMCID: 3646478.
76. Kamel F, **Umbach DM**, Stallone L, Richards M, Hu H, Sandler DP. Association of lead exposure with survival in amyotrophic lateral sclerosis. *Environmental Health Perspectives* 2008; 116:943-947. PMID: 18629318. PMCID: 2453164.
77. Shi M, **Umbach DM**, Vermeulen SH, Weinberg CR. Making the most of case-mother/control-mother studies. *American Journal of Epidemiology* 2008; 168:541-547. PMID: 18650222. PMCID: 2732952.
78. Markunas CA, **Umbach DM**, Xu Z, Taylor JA. Assessing candidate gene nsSNPs for phenotypic differences in double-strand break repair using radiation-induced  $\gamma$ H2A.X foci. *Journal of Cancer Epidemiology*, 2008; 2008:387423. PMID: 20445776. PMCID: 2858903.
79. Vermeulen S, Shi M, Weinberg CR, **Umbach DM**. A hybrid design: case-parent triads supplemented with control-mother dyads. *Genetic Epidemiology* 2009; 33:136-144. PMID: 18759250. PMCID: 2819841.
80. Cao Y, Calafat AM, Doerge DR, **Umbach DM**, Bernbaum JC, Twaddle NC, Ye X, Rogan WJ. Isoflavones in urine, saliva, and blood of infants – data from a pilot study on the estrogenic activity of soy formula. *Journal of Exposure Science and Environmental Epidemiology* 2009; 19:223-234. PMID: 18665197. PMCID: 2630504.
81. Cao Y, Rao SD, Phillips TM, **Umbach DM**, Berenbaum JC, Archer JI, Rogan WJ. Are breast-fed infants more resilient? Feeding method and cortisol in infants. *Journal of Pediatrics* 2009; 154:452-454. PMID: 19874763. PMCID: 2771117.
82. Swartz CD, King LC, Nesnow S, **Umbach DM**, Kumar S, DeMarini DM. Mutagenicity, stable DNA adducts, and abasic sites induced in *Salmonella* by phenanthro[3,4-*b*]- and phenanthro[4,3-*b*]thiophenes, sulphur analogs of benzo[*c*]phenanthrene. *Mutation Research: Fundamental and Molecular Mechanisms of Mutagenesis* 2009; 661:47-56. PMID: 19041882. PMCID: 2819846.
83. Shi M, **Umbach DM**, Weinberg CR. Using case-parent triads to estimate relative risk associated with a candidate haplotype. *Annals of Human Genetics* 2009; 73:346-359. PMID: 19344450. PMCID: 2782437.
84. Hoppin JA, **Umbach DM**, London SJ, Henneberger PK, Kullman GJ, Coble J, Alavanja MCR, Beane Freeman LE, Sandler DP. Pesticide use and adult-onset asthma among male farmers in the Agricultural Health Study. *European Respiratory Journal* 2009; 34:1296-1303. PMID: 19541724. PMCID: 2822385.
85. Fang F, Quinlan P, Ye W, Richards M, Barber MK, **Umbach DM**, Sandler DP, Kamel F. Workplace exposures and the risk of amyotrophic lateral sclerosis. *Environmental Health Perspectives* 2009; 117:1387-1392. PMID: 19750102. PMCID: 2737014.



86. Watson A, Kent P, Paller A, Alam M, **Umbach DM**, Yoon JW, Iannaccone P, Walterhouse D. *GLI1* Genotypes do not predict basal cell carcinoma risk. *Molecular Cancer* 2009; 8:113. PMID: 19948058. PMCID: 2789726.
87. Peddada SD, **Umbach DM**, Harris S. A response to Information criterion-based clustering with order-restricted candidate profiles in short time-course microarray experiments. *BMC Bioinformatics* 2009; 10:438. PMID: 20028515. PMCID: 2813245.
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#### MANUSCRIPTS SUBMITTED OR UNDER REVISION

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2. Shi M, **Umbach DM**, Weinberg CR. Using the parental phenotypes in case-parent studies.
3. Xu MY, **Umbach DM**, Murphy E, McMahon F, Shugart YY. A novel mixture model to estimate the time to drug-effect onset and its association with covariates.
4. Lyles RH, Mitchell EM, Weinberg CR, **Umbach DM**, Schisterman EF. An efficient design strategy for logistic regression using outcome-and-covariate-dependent pooling of biospecimens prior to assay.

#### INVITED PUBLICATIONS

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#### CONFERENCE PROCEEDINGS, REVIEWS, BOOK CHAPTERS

1. Davis DD, **Umbach DM**, Pennypacker SP, Coppolino JB. Probability of acute SO<sub>2</sub>-damage occurring on trees near existing or proposed sources of SO<sub>2</sub>. *Mitteilungen der forstlichen Bundesversuchsanstalt Wien* 1981; 137: 141-143.
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6. Hoppin JA, **Umbach DM**, London SJ, Lynch CF, Alavanja MCR, Sandler DP. Pesticides and adult respiratory outcomes in the Agricultural Health Study. Presented at the Collegium Ramazzini sponsored conference: Framing the Future in light of the Past: Living in a Chemical World, Bologna, Italy, 18-21 September 2005. *Annals of the N.Y. Academy of Sciences* 2006; 1076: 343-354.
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#### LETTERS, CORRECTIONS

1. Weinberg CR, **Umbach DM**, Greenland S. Authors' reply to letters by D. Thomas and N.J. Birkett RE: "When will nondifferential misclassification of an exposure preserve the direction of a trend?" *American Journal of Epidemiology* 1995; 142: 784.
2. Weinberg CR, Shi M, **Umbach DM**. Re: "Genetic association and gene-environment interaction: a new method for overcoming the lack of exposure information among controls." *American Journal of Epidemiology* 2011; 173(11):1346-1347. PMID: 21558409. PMCID: 310524.
3. Popat RA, Van Den Eeden SK, Tanner CM, Kamel F, **Umbach DM**, Marder K, Mayeux R, Ritz B, Ross GW, Petrovitch H, Topol B, McGuire V, Nelson LM. Response to Hill-Burns *et al.* letter: "An attempt to replicate interaction between coffee and CYP1A2 gene in connection to Parkinson's disease." *European Journal of Neurology* 2011; 18(9):e109. PMID: 21834892.
4. Swartz CD, King LC, Nesnow S, **Umbach DM**, Kumar S, Sikka H, DeMarini DM. Erratum to Mutagenicity, stable DNA adducts, and abasic sites induced in Salmonella by phenanthro[3,4-b]- and phenanthro[4,3-b] thiophenes, sulphur analogs of benzo[c]phenanthrene [Mutat. Res., 661, (2009), 47-56]. *Mutation Research: Fundamental and Molecular Mechanisms of Mutagenesis* 2010; 692(1-2):66.
5. Weinberg CR, **Umbach DM**. Correction to "Using pooled exposure assessment to improve efficiency in case-control studies," by Clarice R. Weinberg and David M. Umbach; 55, 7718-726, September 1999. *Biometrics* 2014; 70:1061.

#### INVITED PRESENTATIONS

1. **Umbach DM**. 1995. Statistical methods for assessing gene  $\times$  environment interactions. Presented to the Department of Epidemiology, University of North Carolina, May 2, Chapel Hill, NC.
2. **Umbach DM**. 1996. Statistical methods for evaluating gene-environment interaction. Presented at the meeting of Piedmont Genetic Epidemiology Society, March 6, Chapel Hill, NC.
3. **Umbach DM**. 1998. Detecting interactions between environmental factors and candidate genes: statistical design and analysis. Presented at the Southern Research Conference on Statistics, Session on Statistics in Environmental Health. June 7-11, Navarre Beach, FL.
4. **Umbach DM**. 1999. Approaches to studying gene-by-environment interaction. Presented at the 1999 American Association for Advancement of Science Annual Meeting, January 21-26, Anaheim, CA.
5. **Umbach DM**. 1999. Genotype-exposure interactions: What can studies of cases and their parents tell us? Presented at 20<sup>th</sup> Annual David W. Smith Workshop on Malformations and Morphogenesis, August 3-9, Schlangenbad, Germany.
6. **Umbach DM**. 2000. Studying gene-environment interactions with case-parent designs. Presented at the meeting of the Piedmont Genetic Epidemiology Society. February 25, Research Triangle Park, NC.

7. **Umbach DM.** 2000. Designs for studying how exposures and genes together influence disease risk. Presented at the meeting of the Triangle Reproductive Health Network. April 5, Research Triangle Park, NC.
8. **Umbach DM.** 2001. Study designs that use parents and an offspring to investigate the joint effects of exposures and candidate genes on disease risk. Presented at the US-European Workshop: Gene-Environment Research at the Interface of Toxicology and Epidemiology. September 4-5, Garmisch-Partenkirchen, Germany.
9. **Umbach DM.** 2004. Combining information from multiple studies to improve inference about genetic and environmental risks. Poster/Discussion at the 16<sup>th</sup> Conference of the International Society for Environmental Epidemiology Annual Meeting, August 1-4, New York, NY.
10. **Umbach DM.** 2004. Reducing the genotyping needed for case-parents designs by pooling DNA samples. Presented at the 2004 Joint Statistical Meetings, August 8-12, Toronto, Ontario, Canada

#### **CONTRIBUTED PRESENTATIONS/POSTERS (since 2006)**

1. **Umbach DM, Shi M, Weinberg CR.** 2009. Studying case-parent triads to identify haplotype-by-exposure interactions. Poster presented at the 19<sup>th</sup> International Genetic Epidemiology Society meeting, October 18-20, Kahuku, HI.
2. **Umbach DM, Shi M, Weinberg CR.** 2009. Studying gene-environment interaction using case-control-parent tetrads. Poster presented at 59<sup>th</sup> annual meeting of the American Society for Human Genetics, October 20-24, Honolulu, HI.
3. **Umbach DM, Shi M, Weinberg CR.** 2014. Disentangling pooled triad genotypes for association studies. Poster presented at the 2014 Joint Statistical Meetings, August 2-7, Boston, MA.

I have co-authored over 50 additional presentations/posters that were presented at various scientific meetings by others.