

Katie Marie O'Brien, MSPH, PhD

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Contact Information

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Education

2013 PhD in Epidemiology with a minor in Biostatistics, Gillings School of Global Public Health, University of North Carolina at Chapel Hill (UNC)
Race and subtype differences in the replication of previously identified breast cancer susceptibility loci: A Bayesian approach [Co-chairs: Robert Millikan and Stephen Cole]

2010 MSPH, Epidemiology, Gillings School of Global Public Health, University of North Carolina at Chapel Hill

2005 BA, Williams College, Williamstown, MA
Double Major: Mathematics and Psychology

Work Experience

2018-present Staff Scientist, Epidemiology Branch, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC

2013-2018 Post-doctoral fellow, Biostatistics and Computational Biology Branch, NIEHS, Research Triangle Park, NC (Primary mentor: Clarice R. Weinberg, PhD)

2011-2013 Intern, *Epidemiology*

2007-2012 Graduate Research Assistant, Department of Epidemiology, UNC
Mentors: Drs. Lawrence Engel (11-12), Robert Millikan (08-11), and Audrey Pettifor (07-08)

2005-2007 Data Manager (05-06), promoted to Regulatory Coordinator (06-07)
Clinical Trials Office, Division of Hematology and Medical Oncology
Weill Medical College of Cornell University, New York, NY

Honors and Awards

2020 NIEHS Director's Merit Award, for leadership in executing the Biostatistics and Bioinformatics Short Courses

NIEHS Intramural Paper of the Month (March), "Association of powder use in the genital area with risk of ovarian cancer"

2019 NIEHS Intramural Paper of the Month (December), "Perineal talc use, douching and the risk of uterine cancer"

2018 Best Poster, National Cancer Institute Cohort Consortium Annual Meeting

Accepted as Early Career Scientist to American Association for Cancer Research Integrative Molecular Epidemiology Workshop: Bridging Cancer Biology and Prevention. July 2018, Boston MA.

- 2017 NIEHS Intramural Paper of the Month (October) “Serum vitamin D and risk of breast cancer within five years”
- 2016 NIEHS Fellow of the Year
Best oral presentation for “Serum vitamin D and risk of breast cancer within five years”, 8th annual SPER/SER Day, National Institute of Environmental Health Sciences
- 2015 NIEHS Intramural Paper of the Month (November) “Environmental chemicals in urine and blood: Improving methods for creatinine and lipid adjustment”
Best poster presentation for “Environmental chemicals in urine and blood: Improving methods for creatinine and lipid adjustment”, 7th annual SPER/SER Day, National Institute of Environmental Health Sciences
- 2011 Berton H. Kaplan Student Publication Award, Epidemiology Department

Teaching and Lecturing:

- March 2021 Guest Lecturer, “Cancer Epidemiology Research in the NIEHS Sister Study”, Epidemiology Seminars course, University of California Davis
- February 2019 Guest Lecturer, “Epidemiology and the Sister Study”, IDST 184- Research beyond Academia, University of North Carolina at Chapel Hill
- July 2018 Lecturer, NIEHS Science, Teachers and Research Summer Institute
- Summer 2016 Co-lead journal club and science workshops for summer intern program
Instructor, “Biostatistics I: Introduction to Statistics and Experimental Design”, NIEHS (half-day course)
- Spring 2016 “Vitamin D and Breast Cancer in the Sister Study: An Epidemiology Example”. Guest lecture in “Rx for Science Literacy” presented by the North Carolina Association for Biomedical Research at the National Institutes of Environmental Health Sciences, Research Triangle Park, NC.
- Spring 2015 Co-Instructor for “Professional Development for Epidemiology Students”, Department of Epidemiology, UNC
- Spring 2014 Primary instructor for “Bayesian Methods in Epidemiology: Basic principles and applications”, Department of Epidemiology, UNC
- Fall 2013 “An introduction to Bayesian methods for epidemiologists.” Guest lecture in “Epidemiologic Analysis of Binary Data”, Dept of Epidemiology, UNC
- Spring 2010 Teaching Assistant, “Theory and Quantitative Methods in Epidemiology”, Department of Epidemiology, UNC
- 2004-2005 Teaching assistant, “Elementary Statistics and Data Analysis” and “Intermediate Statistics”, Williams College
- 2003-2004 Junior advisor (resident mentor in freshmen dormitory)
Teaching assistant, “Quantitative Studies”, and “Elementary Statistics and Data Analysis”
Tutor, calculus and statistics
Williams College
- 2002-2003 Tutor, calculus and statistics, Williams College

Peer-reviewed Publications

Orcid ID: [0000-0002-1931-1349](https://orcid.org/0000-0002-1931-1349)

[Google scholar](#)

[PubMed](#)

* Shared first author, † Mentee, § Shared senior author

64. **O'Brien KM**, Keil AP, Harmon QE, Jackson CL, White AJ, Diaz Santana MV, Taylor JA, and Sandler DP. Vitamin D supplement use and risk of breast cancer by race/ethnicity. *In press, Epidemiology*.
63. Kuiper JR, **O'Brien KM**, Ferguson KK, Buckley JP. Urinary specific gravity measures in the US population: implications for adjustment of non-persistent chemical urinary biomarker data. *In press, Environment International*.
62. Park J, Rodriguez JL, **O'Brien KM**, Nichols HB, Hodgson ME, Weinberg CR, and Sandler DP. Health-related quality of life outcomes among breast cancer survivors. *Cancer*, 2021; 127(7): 1114-1125.
61. **O'Brien KM**, Tworoger SS, Harris HR, Trabert B, Weinberg CR, Fortner RT, D'Aloisio AA, Kaunitz A, Wentzensen N[§], Sandler DP[§]. Genital powder and uterine cancer: a pooled analysis. *International Journal of Cancer*, 2021; 148(11) 2692-2701.
60. von Holle A, **O'Brien KM**, Sandler DP, and Weinberg DR. Evidence for familial clustering in breast cancer age at onset. *International Journal of Epidemiology*. 2021; 50(1); 97-104.
59. White AJ, Gregoire A, Taylor KW, Eberle C, Gaston S, **O'Brien KM**, Jackson CL and Sandler DP. Adolescent use of hair dyes, straighteners and perms in relation to breast cancer risk. *International Journal of Cancer*. 2021; 148: 2255-2263.
58. Park YMM, Bookwalter DB, **O'Brien KM**, Jackson CL, Weinberg CR, and Sandler DP. A prospective study of type 2 diabetes, metformin use, and risk of breast cancer. *Annals of Oncology*. 2021; 32(3):351-359.
57. von Holle A, **O'Brien KM**, Sandler DP, Janicek R, and Weinberg CR. Association between iron serum biomarkers and breast cancer. *Cancer Epidemiology, Biomarkers and Prevention*, 2021; 30(2):422-425.
56. Nichols HB, Graff M, Bensen JT, Lunetta KL, **O'Brien KM**, Troester MA, Williams LA, Young K, Hong CC, Yao S, Haiman CA, Ruiz-Narvaez EA, Ambrosone CB, Palmer JR, and Olshan AF. Genetic variants in anti-Mullerian hormone-related genes and breast cancer risk: results from the AMBER consortium. *Breast Cancer Research and Treatment*, 2021; 185(2): 469-478.
55. Upton K, **O'Brien KM**, Hall JE, Baird DD. Association between urinary cadmium concentrations and follicle stimulating hormone in older reproductive-aged women and the impact of the urinary creatinine adjustment method on results. *American Journal of Epidemiology*, 2021; 190(1):116-124.
54. Xu J, White AJ, Niehoff NM, **O'Brien KM**, and Sandler DP. Airborne metals exposure and risk of hypertension in the Sister Study. *Environmental Research*, 2020; 191:110144.
53. Jia M, Vogtmann E, **O'Brien KM**, Weinberg CR, Sandler DP and Gierach GL. The association between periodontal disease and breast cancer in a prospective cohort study. *Cancer Prevention Research*, 2020; 13(12):1007-1016.
52. Lawrence KBG, Kresovich JKK, **O'Brien KM**, Xu Z, Taylor JA, and Sandler DP. Socioeconomic disadvantage and methylation-based biologic age in US women. *JAMA Network Open*, 2020; 3(11):e2024329.

51. Goldberg M, D'Aloisio AA, **O'Brien KM**, Zhao S, and Sandler DP. Pubertal timing and breast cancer risk in the Sister Study cohort. *Breast Cancer Research*, 2020; 22(1): 112.
50. Fortner RT, Rice MS, ... **O'Brien KM**, ... Tworoger SS, Schouten LJ. Ovarian cancer risk factor associations by primary anatomic site: Results from the Ovarian Cancer Cohort Consortium. *Cancer Epidemiology, Biomarkers, and Prevention*, 2020; 29(10):2010-2018.
49. Andrew AS, **O'Brien KM**, Jackson BP, Kaye W, Wagner L, Stommel EJ, Horton K, Sandler DP, Weinberg CR[§], and Mehta PF[§]. Keratinous biomarker of mercury exposure associated with amyotrophic lateral sclerosis risk in a population-based U.S. study. *Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration*, 2020; 21(5-6): 420-427.
48. White AJ, **O'Brien KM**, Niehoff NM, Jackson BP, Karagas MR, Weinberg CR, and Keil AP. Toenail metal concentrations and age at menopause: a prospective study. *Environmental Epidemiology*, 2020; 4(4):e0104.
47. Diaz-Santana MV, **O'Brien KM**, D'Aloisio AA, Regalado G, Sandler DP, and Weinberg CR. Perinatal and postnatal exposures and risk of young-onset breast cancer, overall and by hormone receptor status: results from the Two Sister Study. *Breast Cancer Research*, 2020; 22(1):88
46. Schoemaker MJ*, Nichols HB*, ... **O'Brien KM**, ... Sandler DP[§], and Swerdlow AJ[§] Adult weight change and premenopausal breast cancer risk: a prospective pooled analysis of data from 628,463 women. *International Journal of Cancer*, 2020; 147(5):1306-1314.
45. Bertrand KA, Castro-Webb N, Cozier YC, Li S, **O'Brien KM**, Rosenberg L, and Palmer JR. Gestational diabetes and risk of breast cancer in African-American women. *Cancer Epidemiology, Biomarkers and Prevention*, 2020; 29(7): 1509-1511.
44. Keil AP, Buckley JP, **O'Brien KM**, Ferguson KK, Zhao S, White AJ. A quantile-based g-computation approach to addressing the effects of exposure mixtures. *Environmental Health Perspectives*, 2020; 128(4):47004.
43. Niehoff NM, Keil AP, **O'Brien KM**, Jackson BP, Karagas MR, Weinberg CR, and White AJ. Metals and trace elements in relation to body mass index in a prospective study of US women. *Environmental Research*, 2020. 184:109396.
42. Trabert B, Tworoger SS, **O'Brien KM**, ..., Wentzensen N. Lifetime number of ovulatory cycles and ovarian cancer risk: an analysis from the Ovarian Cancer Cohort Consortium (OC3). *Cancer Research*, 2020; 80(5):1210-1218.
41. Wang C, **O'Brien KM**, Xu Z, Sandler DP, Taylor JA, and Weinberg CR. Long-term ambient fine particulate matter and DNA methylation in inflammation pathways: Results from the Sister Study. *Epigenetics*, 2020; 15(5): 524-535.
40. Shi M, **O'Brien KM** and Weinberg CR. Interactions between a polygenic risk score and non-genetic risk factors for young-onset breast cancer. *Scientific Reports*, 2020; 10(1):3242.
39. Kresovich JK, **O'Brien KM**, Xu Z, Weinberg CR, Sandler DP, and Taylor JA. Circulating immune cell profiles and breast cancer risk. *JAMA Network Open*, 2020; 3(1):e1919536.
38. **O'Brien KM**, Tworoger SS, Harris HR, Anderson GL, Weinberg CR, Trabert B, Kaunitz A, D'Aloisio AA, Sandler DP[§], Wentzensen N[§]. Association of powder use in the genital area with risk of ovarian cancer. *Journal of the American Medical Association*, 2020; 323(1):49-59.
37. Kresovich JK, Xu Z, **O'Brien KM**, Weinberg CR, Sandler DP, Taylor JA. Epigenetic mortality predictors and incidence of breast cancer. *Aging*, 2019; 11(24):11975-11987.

36. **O'Brien KM**, D'Aloisio AA, Shi M, Murphy JD[†], Sandler DP and Weinberg CR. Perineal talc use, douching and the risk of uterine cancer. *Epidemiology*, 2019; 30(6); 845-852.
35. Weinberg CR, Shi M, **O'Brien KM** and Umbach DM. Adjusting for urinary creatinine or serum lipids when analyte assays are based on pooled specimens. *Epidemiology*, 2019; 30(5): 768-779.
34. Murphy JD[†], Sandler DP, White AJ, and **O'Brien KM**. Severe acne and risk of breast cancer. *Breast Cancer Research and Treatment*, 2019; 177(2): 487-495.
33. Kresovich JK, Xu Z, **O'Brien KM**, Weinberg CR, Sandler DP, and Taylor JA. Methylation-based biologic age and breast cancer risk. *Journal of the National Cancer Institute*, 2019; 111(10): djz020.
32. **O'Brien KM**, White AJ, Jackson BP, Sandler DP, Karagas MR, and Weinberg CR. Toenail-based toxic metals and young-onset breast cancer. *American Journal of Epidemiology*, 2019; 188(4): 34-43. [Republished after error correction.]
31. **O'Brien KM**, Sandler DP, Taylor JA, and Weinberg CR. The influence of a breast cancer diagnosis on serum 25-hydroxyvitamin D. *American Journal of Epidemiology*. 2019; 188(4): 637-645.
30. **O'Brien KM**, White AJ, Sandler DP, Jackson BP, Karagas MR, Weinberg CR. Do post-breast cancer diagnosis toenail metal concentrations reflect pre-diagnostic levels? *Epidemiology*. 2019; 30(1): 112-119.
29. Geller RJ, Brotman RM, **O'Brien KM**, Fine DM, Zota AR. Phthalate Exposure and Odds of Bacterial Vaginosis among U.S. Reproductive-Aged Women, NHANES 2001-2004. *Reproductive Toxicology*, 2018; 82:1-9.
28. White AJ, **O'Brien KM**, Niehoff N, and Sandler DP. Metallic Air Pollutants and Breast Cancer Risk in a Nationwide Cohort Study. *Epidemiology*. 2019; 30(1): 20-28.
27. **O'Brien KM**, Taylor JA, Sandler DP, Kinyamu HK, Xu Z, Weinberg CR. Vitamin D, DNA methylation, and breast cancer. *Breast Cancer Research*, 2018; 20(1):70.
26. Schoemaker MJ[‡], Nichols HB[‡], Wright LB, Brook MN, Jones ME, **O'Brien KM**, ..., Sandler DP[‡], Swerdlow AJ[‡]. Association of body mass index and age with subsequent risk of premenopausal breast cancer. *JAMA Oncology*, 2018; e181771.
25. Trabert B, Poole EM, ..., **O'Brien K**, ..., Wentzensen N, and Tworoger SS; on behalf of the Ovarian Cancer Cohort Consortium (OC3). Analgesic use and ovarian cancer risk: An analysis in the Ovarian Cancer Cohort Consortium (OC3). *Journal of the National Cancer Institute*, 2019; 111(2):djy100.
24. White AJ, **O'Brien KM**, Jackson BP, Karagas MR. Urine and toenail cadmium levels in pregnant women: a reliability study. *Environment International*, 2018; 118:86-91.
23. **O'Brien KM**, Sandler DP, Shi M, Harmon QE, Taylor JA, and Weinberg CR. Genome-wide association study of 25-hydroxyvitamin D in US women. *Frontiers in Genetics*, 2018; 9:1-11.
22. Hooper LG, Young MT, Keller JP, Szpiro AA, **O'Brien KM**, Sandler DP, Vedal S, Kaufman JD, London SJ. Ambient air pollution exposure and chronic bronchitis in a cohort of U.S. women. *Environmental Health Perspectives*, 2018; 126(2): 1-9.

21. **O'Brien KM**, Sandler DP, Kinyamu HK, Taylor JA, Weinberg CR. Single nucleotide polymorphisms in vitamin D-related genes may modify vitamin D-breast cancer associations. *Cancer Epidemiology, Biomarkers, and Prevention*, 2017; 26(12):1761-1771.
20. **O'Brien KM**, Sandler DP, Taylor JA, Weinberg CR. Serum vitamin D and risk of breast cancer within five years. *Environmental Health Perspectives*, 2017; 125(7):1-9.
19. **O'Brien KM**, Whelan DR†, Sandler DP, Hall JE, and Weinberg CR. Predictors and long-term health outcomes of eating disorders. *PLoS One*, 2017; 12(7): e0181104.
18. Park YMM, White AJ, Nichols HB, **O'Brien KM**, Weinberg CR, and Sandler DP. The association between metabolic health, obese phenotype and the risk of breast cancer. *International Journal of Cancer*, 2017; 140(12):2657-2666.
17. Park YMM, **O'Brien KM**, Zhao S, Weinberg CR, Baird DD, and Sandler DP. Gestational diabetes mellitus may be associated with increased risk of breast cancer. *British Journal of Cancer*, 2017; 116(7):960-963.
16. **O'Brien KM**, Whelan DR†, Sandler DP, and Weinberg CR. Eating disorders and breast cancer. *Cancer Epidemiology, Biomarkers, and Prevention*, 2017; 26(2): 206-211.
15. Shi M*, **O'Brien KM***, Sandler DP, Taylor J, Zaykin DV, and Weinberg CR. Previous GWAS hits in relation to young-onset breast cancer. *Breast Cancer Research and Treatment*, 2017; 161(2): 333-344.
14. Gonzalez N†, **O'Brien KM**, D'Aloisio AA, Sandler DP§, and Weinberg CR§. Talc use, douching and risk of ovarian cancer. *Epidemiology*, 2016; 27: 797-802.
13. **O'Brien KM***, Shi M*, Sandler DP, Taylor JA, Zaykin DV, Keller J, Wise AS, and Weinberg CR. A family-based, genome-wide association study of young-onset breast cancer: Germline variants and maternally-mediated effects. *European Journal of Human Genetics*, 2016; 24: 1316-1323.
12. **O'Brien KM**, Upson K, Cook NR, and Weinberg CR. Environmental chemicals in urine and blood: Improving methods for creatinine and lipid adjustment. *Environmental Health Perspectives*. 2016; 124(2): 220-227.
11. **O'Brien KM**, Sun J†, Sandler DP, DeRoo LA, and Weinberg CR. Risk factors for young-onset breast cancer. *Cancer Causes and Control*. 2015; 26: 1771-1778.
10. **O'Brien KM**, Fei C, Sandler DP, Nichols HB, DeRoo LA, and Weinberg CR. Hormone therapy and young-onset breast cancer. *American Journal of Epidemiology*. 2015; 181: 799-807.
9. **O'Brien KM**, Cole SR, Engel LS, Bensen JT, Poole C, Herring AH, and Millikan RC. Breast cancer subtypes and previously established genetic risk factors: A Bayesian approach. *Cancer Epidemiology, Biomarkers and Prevention*. 2014; 23: 84-97.
8. **O'Brien KM**, Cole SR, Poole C, Bensen JT, Herring AH, Engel LS, and Millikan RC. Replication of breast cancer susceptibility loci in whites and African-Americans using a Bayesian approach. *American Journal of Epidemiology*. 2014; 179: 382-94.
7. **O'Brien KM**, Orlow I, Antonescu CR, Ballman K, McCall L, DeMatteo R, and Engel LS. Gastrointestinal stromal tumors: a case-only analysis of single nucleotide polymorphisms and somatic mutations. *Clinical Sarcoma Research*. 2013; 3:12.

6. **O'Brien KM**, Orlow I, Antonescu CR, Ballman K, McCall L, DeMatteo R, and Engel LS. Gastrointestinal stromal tumors, somatic mutations and candidate genetic risk variants, *PLoS One*. 2013; 8(4):e62119. doi:10.1371/journal.pone.0062119
5. Mordukhovich I, Reiter PL, Backes DM, Family L, McCollough LE, **O'Brien KM**, Razzaghi H, and Olshan AF. A review of African American-white differences in risk factors for cancer: prostate cancer, *Cancer Causes and Control*. 2011; 3: 341-357.
4. **O'Brien KM**, Cole SR, Tse CK, Perou CM, Carey LA, Foulkes WD, Dressler LG, Geradts J, and Millikan RC. Intrinsic breast tumor subtypes, race, and long-term survival in the Carolina Breast Cancer Study, *Clinical Cancer Research*. 2010; 16: 6100-6110.
3. Pettifor A, **O'Brien K**, MacPhail C, Miller W, and Rees, H. Early coital debut and associated risk factors among young women and men in South Africa, *International Perspectives on Sexual and Reproductive Health*. 2009; 35 (2): 82-90.
2. Li T, Christos PJ, Sparano JA, Hershman DL, Hoschander S, **O'Brien K**, Wright JJ, and Vahdat LT. Phase II trial of the farnesyltransferase inhibitor tipifarnib plus fulvestrant in hormone receptor-positive metastatic breast cancer: New York Cancer Consortium Trial P6205, *Annals of Oncology*. 2009; 20: 642-647.
1. Gorgun E, Remzi FH, Montague DK, Conner JT, **O'Brien K**, Laparo B, and Fazio VW. Male sexual function improves after ileal pouch anal anastomosis, *Colorectal Disease*. 2005; 7:545-550.

Large consortia-based papers as middle author

10. Domchek SM, Yao S, Chen F..... Couch FJ, Polley EC, and Palmer JR on behalf of the CARRIERS Consortium [includes **O'Brien KM**]. Similar prevalence of germline pathogenic variants in cancer susceptibility genes in U.S. Black women and U.S non-Hispanic white women with breast cancer. *In press, JAMA Oncology*.
9. Adedokun B, Du A, Gao G, ... **O'Brien KM**, ... Palmer JR, Haiman CA, Huo D. Cross-ancestry GWAS meta-analysis identifies six new loci for breast cancer in women of African and European ancestry. *In press, Nature Communications*.
8. Kapoor PM, Mavaddat N, **O'Brien KM**, Garcia-Closas M, and Chang-Claude J. Combined associations between polygenic risk score and classical risk factors with breast cancer risk. *Journal of the National Cancer Institute*. 2021; 113(3): 329-337.
7. Coignard J, Lush M,... **O'Brien KM**.... , Andrieu N, and Antonis AC. A case-only study for identifying genetic modifiers of breast cancer specifically for BRCA1/2 mutation carriers. *Nature Communications*, 2021; 12(1):1078. *Correction (author name) published May 2021*.
6. Hu C, Hart SN, Gnanaolivu R, Huang H, Lee KY, Na J, Gao C, Lilyquist J, Yadav S, ..., **O'Brien KM**, ..., Weitzel JN, Goldgar DE, Domchek SM, Nathanson KL, Kraft P, Polley EC, and Couch FJ. Population-based risks of breast cancer for variants in cancer predisposition genes. *New England Journal of Medicine*, 2021; 384(5):440-451.
5. Jackson SS, Adami HO, Andreotti G, Beane-Freeman LE,..., **O'Brien KM**, ..., McGlynn KA, Campbell PT, and Koshiol J. Associations between reproductive factors and biliary tract cancers in women from the Biliary Tract Cancers Pooling Project. *Journal of Hepatology*, 2020; 73(4):863-872.
4. Kapoor PM, Lindstroem S, ... **O'Brien KM**, ... Milne RL, Chang-Claude J. Assessment of interactions between 205 breast cancer susceptibility loci and 13 established risk factors in

relation to breast cancer risk, in the Breast Cancer Association Consortium. *International Journal of Epidemiology*, 2020; 49(1): 216-230.

3. McGee EE, Campbell PT, Petrick JL, Van Dyke AL, ..., **O'Brien KM**, McGlynn KA, and Koshiol J. Smoking, alcohol, and biliary tract cancer risk: a pooling project of 26 prospective studies. *Journal of the National Cancer Institute*. 2019; 111(12): 1263-1278.
2. Jackson SS, Van Dyke AL, Zhu B, Pfeiffer RM, Petrick JL, ..., **O'Brien KM**, ..., McGlynn KA, Campbell PT, and Koshiol J. Anthropometric risk factors for cancers of the biliary tract in the Biliary Cancers Pooling Project. *Cancer Research*, 2019; 79(15): 3973-3982.
1. Grant DJ, Manichaikul A, ..., **O'Brien KM**, ..., Kennedy CJ, and Schildkraut JM. Evaluation of vitamin D biosynthesis and pathway target genes reveals UGT2A1/2 and EGFR polymorphisms associated with epithelial ovarian cancer in African American Women. *Cancer Medicine*, 2019; 8(5): 2503-2513.

Invited Commentaries, Editorials, Reviews, Letters, or Archived Manuscripts (not Peer-Reviewed)

4. Keil AP, Buckley JP, **O'Brien KM**, Ferguson KK, Zhao S, and White AJ. Response to "Comment on 'A Quantile-based g-Computation Approach to Addressing Effects of Exposure Mixtures'". *Environ Health Perspect*. 2021; 129(3): 38002.
3. **O'Brien KM**, Sandler DP and Wentzensen N. In reply: genital powder use and ovarian cancer. *JAMA*. 2020; 323(20): 2096-2097.
2. **O'Brien KM** and Keil AP. Design and interpretation considerations in registry-based studies. *JAMA Psych*. 2020; 77(1): 15-16.
1. **O'Brien KM**, Upson K, Buckley JP. Lipid and creatinine adjustment to evaluate health effects of environmental exposures. *Current Environmental Health Reports*. 2017; 4 (1): 44-50.

Fellowships, Grants, and Contracts

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| 2019- 2020 | Received \$100,000 grant for "Vitamin D and Breast Cancer in African-American women: A prospective cohort study" from the Office of Dietary Supplement Research Scholars Program (Principal Investigator) |
| 2017-2018 | "The influence of β -carotene supplements, dietary and circulating carotenoids on oxidative stress, inflammation, and risk of postmenopausal breast cancer in the Sister Study" Office of Dietary Supplement Research Scholars Program (Collaborator; Principal Investigator: Yong-Moon Park) |
| 2016- 2017 | "Vitamin D levels over time and the risk of breast cancer" National Institute of Environmental Health Sciences, Division of Intramural Research (Post-doctoral fellow, Principal Investigator: CR Weinberg) |
| 2015- 2017 | "The Role of Cadmium and Other Trace Elements in Young-onset Breast Cancer" National Institute of Environmental Health Sciences, Division of Intramural Research (Post-doctoral fellow, Principal Investigator: CR Weinberg) |
| 2014- 2015 | Received \$100,000 grant for "The Joint Effects of Vitamin D, Genetics, and Epigenetics in the Prevention of Breast Cancer" from the Office of Dietary Supplement Research Scholars Program (Principal Investigator) |
| 2011- 2013 | Recipient of NIH Cancer Education and Career Development Program Institutional Training Grant (5R25CA057726-19) |

2008- 2011 Recipient of NIH National Research Service Award Institutional Training Grant for Cancer Epidemiology (5T32CA009330-30)

Professional Service

Policy coordinator and COVID-19 response leader, First Environments Early Learning Center, Research Triangle Park, NC (2020-present)

NCI Cohort Consortium Associate Member Council (2021); AMC member since 2019

Alumni Association Co-president, University of North Carolina at Chapel Hill, Department of Epidemiology (July 2016 to June 2017)

Reviewer for *The American Journal of Epidemiology*; *Epidemiology*; *Endocrine-related Cancer*; *International Journal of Molecular Sciences*; *Scientific Reports*; *PLoS One*; *International Journal of Environmental Research and Public Health*; *European Journal of Human Genetics*; *Cancer Epidemiology, Biomarkers and Prevention*; *British Journal of Cancer*; *Environmental Health Perspectives*, *Journal of the National Cancer Institute*; *Cancer Causes and Control*; *Nutrients*; *International Journal of Cancer*; *JAMA Psychiatry*

NIEHS Trainees' Assembly Steering Committee, Representative for the Biostatistics and Computational Biology Branch (May 2014-October 2016)

Society for Epidemiologic Research- Student and Post-Doc Committee, Membership and Nominations Committee Co-Chair (2009-2011); SER member since 2009

International Genetic Epidemiology Society- Next Generation, Co-Founder and board member (2011-2013); IGES website administrator (2012-2013)

Mentoring

Post-doctoral Trainees:

Ann Von Holle, PhD

Biostatistics and Computational Biology Branch, NIEHS
Secondary mentor (Primary mentor: Clarice Weinberg)

Mary Diaz Santana, PhD

Biostatistics and Computational Biology Branch, NIEHS
(Primary mentor: Clarice Weinberg)

Pre-doctoral Trainees:

Yilda Macias, NIEHS Summers of Discovery 2021, as Master's student at New Mexico State University. Primary mentor for "Vitamin D and COVID-19".

Current position: Master's student at New Mexico State University

Sharonda Lovett, NIEHS Summers of Discovery 2021, post-Master's Degree from University of South Florida. Co-mentor (with Dale Sandler) for "Gynecologic surgery, hormone therapy use, and breast cancer risk by race/ethnicity".

Current position: will start PhD program in Fall 2021

John Murphy, NIEHS Summers of Discovery 2018 as UNC doctoral student. Primary mentor on "Severe acne and risk of breast cancer"

Current position: Doctoral student in Department of Epidemiology, UNC-Chapel Hill
Winner: 2018 Summer Internship Program Poster Competition (Graduate Level)

Gloria Regalado, NIEHS Summers of Discovery 2016 as North Carolina State undergraduate Co-mentor (with Clarice Weinberg) on “Perinatal and pregnancy-related risk factors for young-onset breast cancer”

Completed MS in Analytics at the Institute of Advanced Analytics, NC State University

Current Position: Associate Consultant at Beghou Consulting

Winner: 2016 NIEHS Presentation Challenge

Nicole Gonzalez, NIEHS Summers of Discovery 2015 and part-time intramural research trainee (September 2015-September 2016) as UNC undergraduate

Co-mentor (with Clarice Weinberg) on “Talc use, douching and risk of ovarian cancer”

Completed MS in Epidemiology, George Washington University, Milken School of Public Health

Current Position: Post-baccalaureate Research Fellow, National Cancer Institute

Denis Whelan, NIEHS Summers of Discovery 2014 as Villanova undergraduate

Co-mentor (with Clarice Weinberg) on “Eating disorders, and breast cancer” and “Young-onset eating disorders and reproductive outcomes”

Completed MS in Biostatistics at Rollins School of Public Health, Emory University

Current position: Data Scientist at Covera Health

Jenny Sun, NIEHS Summers of Discovery 2013 as UNC undergraduate

Co-mentor (with Clarice Weinberg) on “Risk factors for young-onset breast cancer”

Completed MS and PhD in Epidemiology, Harvard University

Current Position: Postdoctoral Research Fellow, Harvard Medical School, Harvard Pilgrim Health Institute

Invited Talks

Vitamin D and risk of breast cancer by race/ethnicity. Office of Dietary Supplements 25th Anniversary Scientific Symposium, October 2021.

Vitamin D and risk of breast cancer by race/ethnicity. Office of Dietary Supplements, Research Scholars Program Symposium, May 2021.

Toenail metals and breast cancer: Lessons learned, University of North Carolina at Chapel Hill, NC, April 2020

Genetic and Environmental Determinants of Breast and Ovarian Cancer, Epidemiology Branch, National Institute of Environmental Health Sciences, Research Triangle Park, NC, February 2017.

Vitamin D and Breast Cancer. School of Public Health, Division of Epidemiology and Community Health, University of Minnesota, Minneapolis, MN, December 2016.

The Joint Effects of Vitamin D, Genetics, and Epigenetics in the Prevention of Breast Cancer. Department of Epidemiology, University of North Carolina at Chapel Hill, NC, October 2016.

Vitamin D and Breast Cancer. Zilber School of Public Health, University of Wisconsin at Milwaukee, WI, January 2016.

The Joint Effects of Vitamin D, Genetics, and Epigenetics in the Prevention of Breast Cancer. Office of Dietary Supplements Research Scholars Symposium, National Institutes of Health, Bethesda, MD, November 2015.

Vitamin D and Breast Cancer. Department of Epidemiology, Geisel School of Medicine, Dartmouth College, Hanover, NH, October 2015.

Vitamin D and Breast Cancer. University of Washington School of Public Health, Department of Epidemiology, Seattle, WA, September 2015.

Breast cancer etiology: Moving from G to E to G by E. Division of Epidemiology, Department of Medicine, Vanderbilt University School of Medicine, Nashville, TN, July 2015.

Environmental biomarkers: Methods and applications. Epidemiology Branch, National Institute of Environmental Health Sciences, Research Triangle Park, NC, June 2015.

Environmental biomarkers: Methods and applications. Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, Quebec, Canada, May 2015.

Environmental chemicals in urine and blood: Methods for creatinine and lipid adjustment. Biostatistics and Computational Biology Branch, National Institute of Environmental Health Sciences, Research Triangle Park, NC, April 2015.

Breast cancer etiology: Moving from G to E to G by E. Department of Epidemiology, University of California, Berkeley, CA, February 2015.

Breast cancer epidemiology: Heterogeneity by age, race, and genetic profile. Department of Epidemiology, Biostatistics and Preventive Medicine, University of New Mexico, Albuquerque, NM, August 2014.

Race and subtype differences in the replication of previously identified breast cancer susceptibility loci: A Bayesian approach. Biostatistics Branch Seminar, National Institute of Environmental Health Sciences, October 2012.

Conference Presentations

Circulating vitamin D concentrations and breast cancer incidence among Black/African-American and non-Black Hispanic/Latina women. International Society of Environmental Epidemiology, August 2021 (TBD).

Vitamin D supplement use and risk of breast cancer by race/ethnicity. Society for Epidemiologic Research, June 2021 (oral presentation)

Douching, genital talc use, and prevalent and incident cervical cancer. Society for Epidemiologic Research, virtual meeting, December 2020 (poster).

Genital powder use and risk of ovarian cancer: A pooled analysis. American Society of Preventive Oncology, Tampa, FL. March 2019 (poster)

Genital powder use and risk of ovarian cancer: A pooled analysis. National Cancer Institute Cohort Consortium meeting, Rockville MD, November 2018 (poster; received Best Poster award)

Perineal talc use, douching and risk of uterine cancer, Society for Epidemiologic Research, Baltimore, MD, June 2018 (poster)

The influence of a breast cancer diagnosis on serum 25(OH)D concentrations, Concurrent Contributed Session, Society for Epidemiologic Research, Baltimore, MD, June 2018 (oral presentation)

The Joint Effects of Vitamin D Genetics and Epigenetics in the Prevention of Breast Cancer. Concurrent Contributed Session, Society for Epidemiologic Research, June 2017, Seattle, WA (oral presentation)

Serum Vitamin D and Breast Cancer within 5 years, Submitted Abstract Session, Society for Epidemiologic Research/Epidemiology Congress of the Americas, Miami, FL, June 2016 (oral presentation)

Serum Vitamin D and Breast Cancer within Five Years. NIEHS Science Day, Research Triangle Park, NC, November 2015 (oral presentation)

Environmental chemicals in urine and blood: Methods for creatinine and lipid adjustment. Society for Epidemiologic Research, June 2015 (poster)

Young-onset eating disorders, reproductive outcomes, and breast cancer. Society for Epidemiologic Research, June 2015 (poster)

Environmental chemicals in urine and blood: Methods for creatinine and lipid adjustment. NIEHS Science Day, November 2014 (poster)

Hormone therapy and young-onset breast cancer. Society for Epidemiologic Research, June 2014 (poster)

Risk Factors for young-onset breast cancer. Society for Epidemiologic Research, June 2014 (poster)

Breast cancer subtypes and previously established genetic risk factors: A Bayesian approach. Society for Epidemiologic Research, Boston, MA, June 2013 (oral presentation)

Gastrointestinal stromal tumors: linking single nucleotide polymorphisms and somatic mutations, Society for Epidemiologic Research, June 2013 (poster)

Breast cancer subtypes and previously established genetic risk factors: A Bayesian approach, American Society of Preventive Oncology, March 2013 (poster)

Race and subtype differences in the replication of previously identified breast cancer susceptibility loci, International Genetic Epidemiology Society, October 2012 (poster)

Gastrointestinal stromal tumors, somatic mutations and candidate genetic risk factors, International Genetic Epidemiology Society, October 2012 (poster)

Bayesian approaches to identifying susceptibility loci: A simulation study, International Genetic Epidemiology Society, September 2011 (poster)

The association between cooked meat and breast cancer in a racially diverse population, Society for Epidemiologic Research, June 2011 (poster)

Subtypes, race, and long-term survival in the Carolina Breast Cancer Study, Society for Epidemiologic Research, Seattle, WA, June 2010 (oral presentation)

Subtypes, race, and long-term survival in the Carolina Breast Cancer Study, American Association for Cancer Research, April 2010 (poster)

Forthcoming Manuscripts

* Shared first author, † Student under my supervision, § Shared senior author

Bertrand KA*, O'Brien KM*, Wright LB, Palmer JR, Blot WJ, Eliassen AH, Rosenberg L, Sandin S, Tobias D, Weiderpass E, Zhang W, Swerdlow AJ[§], Schoemaker MJ[§], Nichols HB[§], and Sandler DP[§]. Gestational diabetes and risk of breast cancer before age 55. *In revision*.

O'Brien KM, Weinberg CR, D'Aloisio AA, Moore KR and Sandler DP. Douching, genital talc use, and prevalent and incident cervical cancer. *In revision*.

- Wentzensen N and **O'Brien KM**. Talc, body powder, and ovarian cancer: A summary of the epidemiologic evidence. *In revision*.
- Gao C, Polley EC, Hart SN,, **O'Brien KM**, ... Nathanson KL, Couch FJ, and Kraft P. Polygenic scores modify risk of breast cancer among carriers of pathogenic variants in cancer predisposition genes. *In revision*.
- Kresovich JK, Xu Z, **O'Brien KM**, Shi M, Weinberg CR, Sandler DP, and Taylor JA. mBCRM: a methylation-based risk model for breast cancer. *In revision*.
- Niehoff NM, **O'Brien KM**, Keil AP, Levine KE, Liyanapatirana C, Haines LG, Waidyanatha S, Weinberg CR, and White AJ. Metals and breast cancer risk: a prospective study using toenail biomarkers. *In revision*.
- Boddicker NJ, Hu C, Weitzel JN,, **O'Brien KM**, ... , Polley EC, Domchek SM, Couch FJ. Risk of late-onset breast cancer in genetically predisposed women. *In revision*.
- O'Brien KM**, Lawrence KG, and Keil AP. The case for case-cohort. *In review*.
- Xu J, Lawrence KG, **O'Brien KM**, Jackson CL and Sandler DP. Association between neighborhood disadvantage and hypertension in the Sister Study. *In review*.
- Baxter JS, Johnson N, Tomczyk K,, **O'Brien KM**, ... Haider S, Orr N, and Fletcher O. Functional annotation of the 2q35 breast cancer risk locus implicates a structural variant in influencing activity of a long-range enhancer element. *In review*.
- Woo JMP, Simanek A, **O'Brien KM**, Parks C, Gaston S, Auer P, Konkel RH, Jackson CL, Meier H, Sandler DP. Early life trauma and incident breast cancer. *In review*.
- White AJ, Sandler DP, Gaston S, Jackson CL, and **O'Brien KM**. Use of hair products in relation to ovarian cancer risk. *In review*.
- Hodgson ME, Arroyave W, Halverson SD, D'Aloisio AA, Jackson CL, Weinberg CR, **O'Brien KM**, White AJ and Sandler DP. The Sister Study: Participant characteristics compared to NHANES and selected US volunteer cohorts. *In review*.
- Park YM, Lilyquist J, van 't Erve TJ, **O'Brien KM**, Nichols HB, Milne GL, Weinberg CR, and Sandler DP. Association of dietary and plasma carotenoids with urinary F2-isoprostanes. *In review*.
- Lowry KP, Geuzinge HA, Stout NK, ..., Mandelblatt JS[§], Kurian AW[§], and Robson ME[§] on behalf of the CARRIERS Consortium [includes **O'Brien KM**]. Breast cancer screening strategies for women with ATM, CHEK2, and PALB2 pathogenic variants: a comparative modeling analysis. *In review*.
- Townsend MK, Trabert B, Fortner RT, **O'Brien KM**, ... , Tworoger SS[§], Wentzensen N[§]. Cohort profile: The Ovarian Cancer Cohort Consortium (OC3). *In review*.
- Goldberg M, D'Aloisio AA, **O'Brien KM**, Zhao S, and Sandler DP. Early-life exposures and age at thelarche in the Sister Study cohort. *In review*.
- Wu Z, **O'Brien KM**, Lawrence KG, Han Y, Weinberg CR, Sandler DP, and Vogtman E. Associations of periodontal disease and tooth loss with all-cause and cause-specific mortality in the Sister Study. *In review*.
- Diaz-Santana MV, **O'Brien KM**, Park YMM, Sandler DP, Weinberg CR. Gestational diabetes mellitus and pre-enrollment and post-enrollment incident type 2 diabetes. *In review*.
- Gregoire AM, VoPham T, Yarosh R, **O'Brien KM** and White AJ. Ambient ultraviolet radiation exposure and breast cancer risk in the US-wide Sister Study Cohort. *In review*.

- O'Brien KM**, Harmon QE, Jackson CL, Diaz-Santana MV, Taylor JA, Weinberg CR and Sandler DP. Circulating vitamin D concentrations and breast cancer incidence among Black/African-American and non-Black Hispanic/Latina women. *In preparation*.
- Talham CJ, Montiel Ishino FA, **O'Brien KM**, Sandler DP, Williams F. Breast cancer screening among Hispanic and non-Hispanic white women by nativity and family history in the Sister Study. *In preparation*.
- Peres LC, Cao B, Townsend M,, **O'Brien KM**, ... Wilkens LR, Fridley BL, and Tworoger SS. Genetically predicted C-reactive protein and interleukin-6 and ovarian cancer risk and survival: a Mendelian randomization study. *In preparation*.
- Gao G, Zhao F, Ahearn T,, **O'Brien KM**, ... Palmer JR, Haiman CA and Huo D. Polygenic risk scores for prediction of breast cancer risk in women of African ancestry: a cross-ancestry approach. *In preparation*.
- Niehoff NM, Terry MB, Bookwalter DB, Kaufman JD, **O'Brien KM**, Sandler DP, and White AJ. Air pollution and breast cancer: an examination of modification by familial breast cancer risk. *In preparation*.