BEIZHAN YAN, Ph.D.

Lamont-Doherty Earth Observatory of Columbia University
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EDUCATION

Ph.D.	**Geology**	Rensselaer Polytechnic Institute, Troy, NY 12180
	08/2000 – 09/2004	*Advisors*: Drs. Jun Abrajano & Richard Bopp
M.S.	**Geochemistry**	Nanjing University, Nanjing, China, 210093
	09/1994 – 08/1997	*Advisor*: Dr. Kai Hu
B.S.	**Geochemistry**	Nanjing University, Nanjing, China, 210093
	09/1990 – 08/1994	*Advisor*: Dr. Liangxin Gu

APPOINTMENTS

07/2009 – Current	Lamont Assistant Research Professor, Lamont-Doherty Earth Observatory, Columbia University
05/2009 – 06/2010	Doherty Associate Research Scientist, Lamont-Doherty Earth Observatory, Columbia University
09/2007 – 04/2009	Institutional Postdoctoral Fellow, Lamont-Doherty Earth Observatory, Columbia University
09/2006 – 08/2007	Postdoctoral Research Scientist, Washington University in St. Louis
10/2004 – 08/2006	Postdoctoral Research Fellow, Idaho National Laboratory (INL) & University of Idaho at Idaho Falls (UI)
09/1997 – 06/2000	Research Associate, Institute of Geography, Chinese Academy of Sciences, Beijing

AWARDS

2004: Robert LaFleur Award	Rensselaer Polytechnic Institute, Troy, NY
1996: Guanghua Awards to the Excellent Students	Nanjing University, China
1994: Fangzhi'an Awards	Rugao City , China
1991,1992,1993, 1994: The People Awards to Excellent Undergraduate Student	Nanjing University, China

PROFESSIONAL AFFILIATIONS

American Geophysical Union
American Chemical Society
The Geochemical Society
Geological Society of America

PROPOSAL AND JOURNAL PEER REVIEWER

National Science Foundation (Geobiology)
Organic Geochemistry
Environmental Science & Technology
Marine Chemistry

PEER REVIEWED PUBLICATIONS

1. Jemielita, T., Gerton, G.L., Neidell, M., Chillrud, S., **Yan, B.**, Stute, M., Howarth, M., Saberi, P., Fausti, N., Penning, T.M., Roy, J., Propert, K.J., and Panettieri, R.A., Jr.,

Unconventional Gas and Oil Drilling Is Associated with Increased Hospital Utilization Rates. PLoS ONE, 2015. 10(7): p. e0131093.

2. Ngo, N.S., Gatari, M., **Yan, B.**, Chilrud, S.N., Bouhamam, K., and Kinney, P.L., Occupational exposure to roadway emissions and inside informal settlements in sub-Saharan Africa: A pilot study in Nairobi, Kenya. Atmospheric Environment, 2015.
3. Han, Y.M., Bandowe, B.A.M., Wei, C., Cao, J., Wilcke, W., Wang, G.H., Ni, H.Y., Jin, Z.D., An, Z., and **Yan, B**., Stronger association of polycyclic aromatic hydrocarbons with soot than with char in soils and sediments. Chemosphere, 2015. 119: p. 1335-1345.
4. S. I. Soneja, J. M. Tielsch, F. C. Curriero, B. Zaitchik, S. K. Khatry, **B. Yan**, S. N. Chillrud, P. N. Breysse, Determining Particulate Matter and Black Carbon Exfiltration Estimates For Traditional Cookstove Use In Rural Nepalese Village Households. *Environ. Sci. Technol.*, (2015); published online Epub2015/04/06 (10.1021/es505565d).
5. Penning, T., Breysse, P., Gray, K., Howarth, M., and **Yan, B**., Environmental health research recommendations from the Inter-Environmental Health Sciences Core Center Working Group on Unconventional Natural Gas Drilling Operations. Environmental Health Perspectives, 2014. 122: p. 1155–1159.
6. Jung, K.H., Perzanowski, M., Rundle, A., Moors, K., **Yan, B**., Chillrud, S.N., Whyatt, R., Camann, D., Perera, F.P., and Miller, R.L., Polycyclic aromatic hydrocarbon exposure, obesity and childhood asthma in an urban cohort. Environmental Research, 2014. 128: p. 35-41.
7. Pitiranggon, M., Perzanowski, M.S., Kinney, P.L., Xu, D., Chillrud, S.N., and **Yan, B**., Determining urea levels in exhaled breath condensate with minimal preparation steps and classic lc–ms. Journal of Chromatographic Science, 2014. 52(9): p. 1026-1031.
8. Jung, K.H., Liu, B., Lovinsky-Desir, S., **Yan, B**., Camann, D., Sjodin, A., Li, Z., Perera, F., Kinney, P., Chillrud, S., and Miller, R.L., Time trends of polycyclic aromatic hydrocarbon exposure in new york city from 2001 to 2012: Assessed by repeat air and urine samples. Environmental Research, 2014. 131: p. 95-103.
9. Rosa, M.J., **Yan, B**., Chillrud, S.N., Acosta, L.M., Divjan, A., Jacobson, J.S., Miller, R.L., Goldstein, I.F., and Perzanowski, M.S., Domestic airborne black carbon levels and 8-isoprostane in exhaled breath condensate among children in New York City. Environmental Research, 2014. 135(0): p. 105-110.
10. Yan, Z., Zhang, H., Maher, C., Arteaga-Solis, E., Champagne, F.A., Wu, L., McDonald, J.D., **Yan, B**., Schwartz, G.J., and Miller, R.L., Prenatal Polycyclic Aromatic Hydrocarbon, Adiposity, Peroxisome Proliferator-Activated Receptor (PPAR) γ Methylation in Offspring, Grand-Offspring Mice. PLoS ONE, 2014. 9(10): p. e110706.
11. **Yan, B**., Abrajano, T.A., Bopp, R.F., Chaky, D., and Chillrud, S.N., Source apportionment of pahs into central park lake, new york city, over a century of deposition. Environmental Toxicology and Chemistry, 2014. 33(5): p. 985-992.
12. Dasgupta, S., Cao, A., Mauer, B., **Yan, B**., Uno, S., and McElroy, A., Genotoxicity of oxy-pahs to japanese medaka (oryzias latipes) embryos assessed using the comet assay. Environmental Science and Pollution Research, 2014. 21: p. 13867-13876.
13. Chen, K., Huang, L., **Yan, B**., Li, H., Sun, H., and Bi, J., Effect of Lead Pollution Control on Environmental and Childhood Blood Lead Level in Nantong, China: An Interventional Study. Environmental Science & Technology, 2014. 48(21): p. 12930-12936.
14. Cai, J., **Yan, B**., Ross, J., Zhang, D.N., Kinney, P.L., Perzanowski, M.S., Jung, K.H., Miller, R.L., and Chillrud, S.N., Validation of microaeth as a black carbon monitor for fixed-site measurement and optimization for personal exposure characterization Aerosol and Air Quality Research, 2014. 128: p. 35–41.
15. Ziervogel, K., D'Souza, N., Sweet, J., **Yan, B**., and Passow, U., Natural oil slicks fuel surface water microbial activities in the northern Gulf of Mexico. Frontiers in Microbiology, 2014. 5.
16. Han, Y., Chen, A., Cao, J., Fung, K., Ho, F., **Yan, B**., Zhan, C., Liu, S., Wei, C., and An, Z., Thermal/optical methods for elemental carbon quantification in soils and urban dusts: Equivalence of different analysis protocols. PLoS ONE, 2013. 8(12): p. e83462.

17. Chu, S., Zhang, H., Maher, C., McDonald, J.D., Zhang, X., Ho, S.-M., **Yan, B**., Chillrud, S., Perera, F., Factor, P., and Miller, R.L., Prenatal and postnatal polycyclic aromatic hydrocarbon exposure, airway hyperreactivity, and beta-2 adrenergic receptor function in sensitized mouse offspring. Journal of Toxicology, 2013. 2013: p. 1-9.
18. Cai, J., **Yan, B**., Kinney, P.L., Perzanowski, M.S., Jung, K.H., Li, T.T., Xiu, G.L., Zhang, D.N., Olivo, C., Ross, J., Miller, R.L., and Chillrud, S.N., Optimization approaches to ameliorate humidity and vibration related issues using the microaeth black carbon monitor for personal exposure measurements. Aerosol Science & Technology, 2013. 47(11): p. 1196-1204.
19. Mainardi, T.R., Mellins, R.B., Miller, R.L., Acosta, L.M., Cornell, A., Hoepner, L., Quinn, J.W., **Yan, B**., Chillrud, S.N., Olmedo, O.E., Perera, F.P., Goldstein, I.F., Rundle, A.G., Jacobson, J.S., and Perzanowski, M.S., Exercise-Induced Wheeze, Urgent Medical Visits, and Neighborhood Asthma Prevalence. Pediatrics, 2013. 131(1): p. E127-E135.
20. Cornell, A.G., Chillrud, S.N., Mellins, R.B., Acosta, L.M., Miller, R.L., Quinn, J.W., **Yan, B**., Divjan, A., Olmedo, O.E., Lopez-Pintado, S., Kinney, P.L., Perera, F.P., Jacobson, J.S., Goldstein, I.F., Rundle, A.G., and Perzanowski, M.S., Domestic airborne black carbon and exhaled nitric oxide in children in NYC. Journal of Exposure Science and Environmental Epidemiology, 2012. 22(3): p. 258-266.
21. Jung, K.H., Hsu, S.I., **Yan, B**., Moors, K., Chillrud, S.N., Ross, J., Wang, S., Perzanowski, M.S., Kinney, P.L., Whyatt, R.M., Perera, F.P., and Miller, R.L., Childhood exposure to fine particulate matter and black carbon and the development of new wheeze between ages 5 and 7 in an urban prospective cohort. Environment International, 2012. 45: p. 44-50.
22. Jung, K.H., **Yan, B**., Moors, K., Chillrud, S.N., Perzanowski, M.S., Whyatt, R.M., Hoepner, L., Goldstein, I., Zhang, B.Z., Camann, D., Kinney, P.L., Perera, F.P., and Miller, R.L., Repeated exposure to polycyclic aromatic hydrocarbons and asthma: effect of seroatopy. Annals of Allergy Asthma & Immunology, 2012. 109(4): p. 249-254.
23. Han, Y.M., Cao, J.J., Kenna, T.C., **Yan, B**., Jin, Z.D., Wu, F., and An, Z.S., Distribution and ecotoxicological significance of trace element contamination in a similar to 150 yr record of sediments in Lake Chaohu, Eastern China. Journal of Environmental Monitoring, 2011. 13(3): p. 743-752.
24. Han, Y.M., Cao, J.J., **Yan, B**., Kenna, T.C., Jin, Z.D., Cheng, Y., Chow, J.C., and An, Z.S., Comparison of Elemental Carbon in Lake Sediments Measured by Three Different Methods and 150-Year Pollution History in Eastern China. Environmental Science & Technology, 2011. 45(12): p. 5287-5293.
25. Jung, K.H., Berna, K., Moors, K., **Yan, B**., Chillrud, S.N., Whyatt, R., Camann, D., Kinney, P.L., Perera, F.P., and Miller, R.L., Effects of Floor Level and Building Type on Residential Levels of Outdoor and Indoor Polycyclic Aromatic Hydrocarbons, Black Carbon, and Particulate Matter in New York City. Atmosphere, 2011. 2(2): p. 96-109. PMC Journal – In Process.
26. Jung, K.H., **Yan, B**., Chillrud, S.N., Perera, F.P., Whyatt, R., Camann, D., Kinney, P.L., and Miller, R.L., Assessment of Benzo(a)pyrene-equivalent Carcinogenicity and Mutagenicity of Residential Indoor versus Outdoor Polycyclic Aromatic Hydrocarbons Exposing Young Children in New York City. International Journal of Environmental Research and Public Health, 2010. 7(5): p. 1889-1900. PMCID: 2898023.
27. Jung, K.H., Patel, M., Moors, K., Kinney, P.L., Chillrud, S.N., Whyatt, R., Hoepner, L., Garfinkel, R., **Yan, B**., Ross, J., Camann, D., Perera, F.P., and Miller, R.L., Effects of heating season on residential indoor and outdoor polycyclic aromatic hydrocarbons, black carbon, particulate matter in an urban birth cohort Atmospheric Environment, 2010. 44: p. 4545-4552. PMCID: 2951607.
28. Hinman, N.W., Kotler, J.M., **Yan, B**., Tenesch, A., Morris, R.V., Tveter, A., Stoner, D.L., and Scott, J.R., Controls on chemistry and diagenesis of naturally occurring iron-oxide phases. Applied Geochemistry, 2009. 24(7): p. 1185-1197.

29. Kotler, J.M., Hinman, N.W., **Yan, B**., Stoner, D.L., and Scott, J.R., Glycine identification in natural jarosites using laser desorption Fourier transform mass spectrometry: Implications for the search for life on Mars. Astrobiology, 2008. 8(2): p. 253-266.
30. Narvaez, R.F., Hoepner, L., Chillrud, S.N., **Yan, B**., Garfinkel, R., Whyatt, R., Camann, D., Perera, F.P., Kinney, P.L., and Miller, R.L., Spatial and temporal trends of polycyclic aromatic hydrocarbons and other traffic-related airborne pollutants in new york city. Environmental Science & Technology, 2008. 42(19): p. 7330-7335.
31. **Yan, B**., Wrenn, B.A., Basak, S., Biswas, P., and Giammar, D.E., Microbial reduction of Fe(III) in hematite nanoparticles by Geobacter sulfurreducens. Environmental Science & Technology, 2008. 42(17): p. 6526-6531.
32. Scott, J.R., Kotler, J.M., Hinman, N.W., **Yan, B**., Stoner, D.L., and Richardson, C.D., Searching for biosignatures as signs of life using GALDI-FTMS. Journal of the Idaho Academy of Science, 43, 26–27. 43, 2008: p. 26-27.
33. **Yan, B**., Stoner, D.L., and Scott, J.R., Direct ld-ftms detection of mineral-associated pahs and their influence on the detection of co-existing amino acids. Talanta, 2007. 72(2): p. 634-641.
34. Louchouarn, P., Chillrud, S.N., Houel, S., **Yan, B**., Chaky, D., Rumpel, C., Largeau, C., Bardoux, G., Walsh, D., and Bopp, R.F., Elemental and molecular evidence of soot- and char-derived black carbon inputs to new york city's atmosphere during the 20th century. Environmental Science & Technology, 2007. 41(1): p. 82-87.
35. **Yan, B**., Stoner, D.L., Kotler, J.M., Hinman, N.W., and Scott, J.R., Detection of biosignatures by geomatrix-assisted laser desorption/ionization (GALDI) mass spectrometry. Geomicrobiology Journal, 2007. 24(3-4): p. 379-385.
36. Scott, J.R., **Yan, B**., and Stoner, D.L., Spatially-correlated mass spectrometric analysis of microbe-mineral interactions. Journal of Microbiological Methods, 2006. 67(2): p. 381-384.
37. **Yan, B**., Abrajano, T.A., Bopp, R.F., Benedict, L., Chaky, D.A., Perry, E., and Keane, D.P., Combined applications of 13c and molecular ratios in sediment cores for pah source apportionment in the new york/new jersey harbor complex. Organic Geochemistry, 2006. 37(6): p. 674-687.
38. **Yan, B**., Abrajano, T.A., Bopp, R.F., Benedict, L.A., Chaky, D.A., Perry, E., Song, J., and Keane, D.P., Combined application of delta c-13 and molecular ratios in sediment cores for pah source apportionment in the new york/new jersey harbor complex. Organic Geochemistry, 2006. 37(6): p. 674-687.
39. **Yan, B**., McJunkin, T.R., Stoner, D.L., and Scott, J.R., Validation of fuzzy logic method for automated mass spectral classification for mineral imaging. Applied Surface Science, 2006. 253(4): p. 2011-2017.
40. **Yan, B**., Abrajano, T.A., Bopp, R.F., Chaky, D.A., Benedict, L., and Chillrud, S.N., Molecular tracers of saturated and polycyclic aromatic hydrocarbon inputs into central park lake, new york city Environmental Science & Technology, 2005. 39(18): p. 7012-7019.
41. **Yan, B**., Benedict, L., Chaky, D.A., Bopp, R.F., and Abrajano, T.A., Levels and patterns of pah distribution in sediments from new york/new jersey harbor complex. Northeastern Geology and Environmental Sciences, 2004. 26(113-122).
42. Abrajano, T.A., **Yan, B**., and O'Malley, V.P., High-molecular weight petrogenic and pyrogenic hydrocarbons in aquatic environments, in Treatise on Geochemistry, B.S. Lollar, Editor. 2003. p. 475-510.
43. **Yan, B**., Tao, L., Zhang, S., Wang, N., Wang, L., Liu, H., and Wang, X., Residue of Rare Earth Elements in Wheat Under Difference Dressing Methods. ACTA SCIENTIAE CIRCUMSTANTIAE, 2002. 22(5): p. 592-597.
44. Liang, T., **Yan, B**., Zhang, S., Wang, L., Wang, N., and Liu, H., Contents and the biogeochemical characteristics of rare earth elements in wheat seeds. Biogeochemistry, 2001. 54(1): p. 41-49.
45. Hu, A., Zhang, S., Wang, L., and **Yan, B**., Study of Plant growth effect of Rare Earth Elements. Journal of the Chinese Rare Earth Society, 1999. 17: p. 551-555.

46. **Yan, B**., Jia, R., and Hu, K., Distribution of Chain Hydrocarbon from Weinan Loess Section and Their Paleoclimatic Significance. Geochemica, 1998. 27: p. 173-180.
47. **Yan, B**., Jia, R., and HU, K., Distribution Differences of Fatty Acids in Paleosol and Loess Layers and their Paleoclimate Significances in Luochuan of Shannxi. JIangshu Geology, 1996. 4: p. 125-130.
48. Jia, R., **Yan, B**., Li, R., Fan, G., and Lin, B., Characteristics of magnetotactic bacteria in Duanjiapo loess section, Shaanxi Province and their environment significance. SCIENCE CHINA Earth Sciences, 1996. 39(5): p. 478-485.

Synergistic Activities

1) Establishment of the Organic Geochemistry Laboratory at LDEO
2) Environmental assessment leader and member of the NIEHS Center for Environmental Health in Northern Manhattan
3) Supervisor of graduate students (Jing Cai,and Ting Zhang), more than 15 undergraduate students (Christian White, Lawrence Cheng, and Daniel Kennedy, Lissa Soares etc), and more than 10 high school summer interns (Danielle Hu and Kaitlyn Mcgrath, etc.)
4) Host of visiting scholar: Dr. Huang Lei (Associate Professor at Nanjing University, China), and Dr. Sanpisa Sritrairat (Assistant Professor, Mahidol University, Thailand) and Dr. Yongming Han, Chinese Academy of Science (Professor).
5) LODOS Committee (Laboratory for Ocean Drilling, Observation, and Sampling (LODOS) http://www.ldeo.columbia.edu/res/div/mgg/lodos/
6) Leader in environmental impacts in the NIEHS Inter-center Hydrofracking Working Group and Co-wrote a white paper for Environmental Health Perspective.
7) Panel team leader in the Energy and Environment Conference, 2013
8) Co-Chair of Unconventional Gas Workshop, NY, 2013
9) Panelist in ESP Panel - Professional Development in Earth Sciences
10) Teaching the course “Air Pollution and Health” in Columbia University

Conflicts of Interest: Collaborators:

B. Brownawell (SUNY Stony Brook), D. Chaky (Pratt Institute), A. McElroy (SUNY Stony Brook), R, Miller (Columbia University), D. Peteet (LDEO), H. Sadayori (Jikei University, Japan), A. Juhl (LDEO), L. Benedict (University of Southern Maine), Y. Mehta (Rowan U), S. Tang (NYSDEC). Uta Passow (UCSB), Steve Chillrud (LDEO), Martin Stute (Barnard College), T. Penning, T. (U. of Pennsylvania), Patrick Breysse (JHU), Jennifer Field (OSU), P. Louchouarn, P (TAMU), X. Li (WHOI), Y. Zheng (Perking U, China), M. Perzanowski (Columbia), S. Sritrairat (Mahidol, Thaliland), Y.M. Han (Chinese Academy of Sciences), V. Asper (USM), and Kinney P. (Columbia U).

Graduate and Post-Graduate Advisors:

Graduate (Master): Prof. Hu Kai (Nanjing University) and Rongfen Jia (CAS)
Graduate (Ph.D): Prof. Teofilo Jun Abrajano (RPI) and Richard Bopp (RPI)
Post Doctoral: Dr. Jill Scott (INL) and Daphne Stoner (Univ. of Idaho);
Dr. Dan Giammar (WUSTL); Steve Chillrud (LDEO)