Ke He Ph.D.

Contact Information

Business Address:	1000 Hilltop Circle, Engineering, Rm 314 Baltimore, MD 21250 USA
Business Phone Number:	+1 (410) 455-3437
Email:	kehe1@umbc.edu

Education

2011 – 2017	**Ph.D.**, Chemical and Biochemical Engineering University of Maryland Baltimore County Baltimore, MD, USA
2006 – 2010	**B.S.**, Biotechnology Engineering Tianjin University of Science & Technology Tianjin, China

Experience

2022 – present	**Assistant Research Scientist**, University of Maryland Baltimore County Department of Chemical, Biochemical & Environmental Engineering
2019 – 2021	**Research Associate**, University of Maryland Baltimore County Department of Chemical, Biochemical & Environmental Engineering
2018 – 2019	**Postdoctoral Fellow**, University of Maryland School of Medicine Department of Epidemiology and Public Health
2012 – 2017	**Graduate Research Assistant**, University of Maryland Baltimore County Department of Chemical, Biochemical & Environmental Engineering
2011 – 2012	**Teaching Assistant**, University of Maryland Baltimore County Department of Chemical, Biochemical & Environmental Engineering
2010 – 2011	**Lab Technician**, CanSino Biologics Inc. Research and Development Center
2009 – 2010	**Undergraduate Research Assistant**, Tianjin University of Science & Technology, Key Laboratory of Industrial Microbiology Ministry of Education

Honors and Awards

2018	Honored in Class of 2018, University of Maryland Baltimore County, awarded for distinguished achievement
2017	Outstanding Contribution in Reviewing Award, Journal of Ceramics International, awarded for distinguished reviewing service
2017	Travel Award, National Environmental Monitoring Conference, awarded for distinguished presentation
2016	Outstanding GSA Senator Award, Graduate Student Association (GSA) at University of Maryland Baltimore County, awarded for distinguished service as a graduate student senator

2016	Certificate of Merit Award (co-authored), Division of Environmental Chemistry, ACS, awarded for distinguished presentation
2014	Best Poster Award, Division of Environmental Chemistry, ACS, awarded for the best presentation in the "Analytical Methods for Detecting and Prioritizing Contaminants of Concern" symposium
2014	Certificate of Merit Award (1st author), Division of Environmental Chemistry, ACS, awarded for distinguished presentation
2010	Excellent Undergraduate Design Award, Tianjin University of Science & Technology, awarded for distinguished performance in undergraduate research
2006 – 2010	Student Scholarship, Tianjin University of Science & Technology, awarded for distinguished performance in coursework

Research Projects

#	YEAR	TOTAL	FUNDING AGENCY AND PROJECT TITLE	ROLE
6	2022	$706,447	Department of Defense, Strategic Environmental Research and Development program (ER21-SO-3626) *Ion-exchange membranes as passive samplers for diverse PFAS* PI: Lee Blaney (UMBC) Start: 09/01/2022 End: 08/31/2025	co-PI
5	2022	$80,000	USGS Chesapeake Ecosystem Study Unit *Chemical analysis of per- and polyfluoroalkyl substances (PFAS) in groundwater samples* PI: Lee Blaney (UMBC) Start: 06/01/2022 End: 05/31/2023	co-PI
4	2021	$188,250	USGS Chesapeake Ecosystem Study Unit *Chemical analysis of per- and polyfluoroalkyl substances (PFAS) in environmental and experimental samples* PI: Lee Blaney (UMBC) Start: 08/01/2021 End: 07/31/2026	co-PI
3	2021	$500,000	NSF ERASE-PFAS and Environmental Engineering *ERASE-PFAS: A "concentrate-and-destroy" technology for treating per- and polyfluoroalkyl substances using a new class of adsorptive photocatalysts* Lead PI: Dongye Zhao (Auburn University); Secondary PI: Lee Blaney (UMBC) Start: 07/15/2021 End: 07/14/2024	co-PI

#	YEAR	TOTAL	FUNDING AGENCY AND PROJECT TITLE	ROLE
2	2021	$750,000	Department of Defense, Strategic Environmental Research and Development program (ER19-SO-1422) *A 'trap-and-zap' technology for cost-effective removal and destruction of aqueous-phase per- and polyfluoroalkyl substances at DoD sites* Lead PI: Dongye Zhao (Auburn University); Secondary PI: Lee Blaney; Start: 09/01/2021 End: 08/31/2025	co-PI
1	2019	$200,000	Department of Defense, Strategic Environmental Research and Development program (ER20-C2-1073) *Ion exchange membranes and fibers as passive samplers for chemically-diverse PFAS* PI: Lee Blaney (UMBC) Start: 05/22/2020 End: 05/26/2022	co-PI

Publications

Peer-reviewed journal articles

1. Wang, T.; **He, K.**; Blaney L.; Chung J. 17ß-estradiol (E2) may be involved in the mode of crustacean female sex hormone (CFSH) action in the blue crab, *Callinectes sapidus*. *Frontiers in Endocrinology*, 1632, 2022.
2. Zhu, Y., Ji, H., **He, K.**, Blaney, L., Xu, T., & Zhao, D. Photocatalytic degradation of GenX in water using a new adsorptive photocatalyst. *Water Research*, 118650, 2022.
3. **He, K.**, Hain, E., Timm, A., & Blaney, L. Bioaccumulation of estrogenic hormones and UV-filters in red swamp crayfish (*Procambarus clarkii*). *Science of The Total Environment*, 764, 142871, 2021.
4. Li, F., Wei, Z., **He, K.**, Blaney, L., Cheng, X., Xu, T., Liu, W. & Zhao, D. A concentrate-and-destroy technique for degradation of perfluorooctanoic acid in water using a new adsorptive photocatalyst. *Water Research*, *185*, 116219, 2020.
5. Mitchelmore, C.L.*, **He, K.***, Gonsior, M., Hain, E., Heyes, A., Clark, C., Younger, R., Schmitt-Kopplin, P., Feerick, A., Conway, A. and Blaney, L. Occurrence and distribution of UV-filters and other anthropogenic contaminants in coastal surface water, sediment, and coral tissue from Hawaii. *Science of the Total Environment* 670: 398-410, 2019 (* Co-first authors).
6. Jepsen, R.; **He, K.**; Blaney L.; Swan, C. Effects of antimicrobial exposure on detrital biofilm metabolism in urban and rural stream environments. *Science of the Total Environment* 666: 1151-1160, 2019.
7. **He, K.**; Hain, E.; Timm, A.; Tarnowski, M.; Blaney, L. Antibiotics, estrogenic hormones, and UV-filters in water, sediment, and shellfish tissue along the Eastern Shore of the Chesapeake Bay. *Science of the Total Environment* 650(2): 3101-3109, 2019.
8. **He, K.**; Timm, A.; Blaney, L. Simultaneous determination of UV-filters and estrogens in aquatic invertebrates by modified Quick, Easy, Cheap, Effective, Rugged, and Safe

extraction and liquid chromatography tandem mass spectrometry, *Journal of Chromatography A* 1509: 91-101, 2017.

9. Snowberger, S.; Adejumo, H.; **He, K**.; Mangalgiri, K. P.; Hopanna, M.; Soares, A. D.; Blaney, L. Direct photolysis of fluoroquinolone antibiotics at 253.7 nm: Specific reaction kinetics and formation of equally-potent fluoroquinolone antibiotics, *Environmental Science & Technology* 50 (17): 9533-9542, 2016.
10. Mangalgiri, K; **He, K.**; Blaney, L. Emerging contaminants: A potential human health concern for sensitive populations, *PDA Journal of Pharmaceutical Science and Technology* 69(2): 215-218, 2015.
11. **He, K.**; Soares, A. D.; Adejumo, H.; McDiarmid, M. A; Squibb, K. S; Blaney, L. Detection of a wide variety of human and veterinary fluoroquinolone antibiotics in municipal wastewater and wastewater-impacted surface water, *Journal of Pharmaceutical and Biomedical Analysis* 106: 136-143, 2015.
12. **He, K.**; Blaney, L. Systematic optimization of an SPE with HPLC-FLD method for fluoroquinolone detection in wastewater, *Journal of Hazardous Materials* 282: 96-105, 2015.
13. Zhang, YG; Zhao, SX; **He, K.**; Li, ZY; Zhao, L.; Wang, XL. Research of the effect of dissolved oxygen (DO) on the Nisin production of mixed fermentation, *China Food Additives Journal* 1, 96-99, 2011.
14. Wang, Y.; Xiao, DG; Guo, XW; **He, K.**; Pi, YP. Effects of Xylanase on ethanol fermentation of corn, *Liquor-Making Science & Technology* 191(5):17-18, 2010.

Peer-reviewed conference proceedings

1. Blaney, L.; Snowberger, S.; **He, K.** Determination of fluoroquinolone antibiotics in wastewater and transformation by UV and UV-H2O2 processes, *Proceedings of the Water Environment Federation Technical Exhibition and Conference*. Chicago, IL, October 5 – 9, 2013.
2. Li, Y.; Kong, DJ; Lu, FP; Niu, T.; Jia, HH; **He, K.** Synthesis of GDP-Mannose in Recombinant *Escherichia coli*. *Proceedings of the 4th International Conference on Bioinformatics and Biomedical Engineering* (Chengdu, China). Jun. 18-20, 2010.

Non-peer reviewed work

1. **He, K.** (2017). Occurrence of a Wide Range of Antibiotics, Estrogenic Hormones, and UV-Filters in Engineered and Natural Systems: Development of Analytical Methods and Investigation of Ecological Effects. Ph.D. Dissertation, University of Maryland Baltimore County, Baltimore, MD, USA

Presentations (presenting author is underlined)

National and International Conferences

1. **He, K.**; Dugan, C.; Feerick, A.; Ellington, M.; Blaney, L. Anion-exchange membranes for passive sampling of per- and polyfluoroalkyl substances. 2022 AEESP Research and Education Conference (St. Louis, MO), June 30, 2022.

2. **He, K.**; Dugan, C.; Feerick, A.; Ellington, M.; Blaney, L. Anion-exchange membranes for passive sampling of per- and polyfluoroalkyl substances. Spring 2022 ACS National Meeting (San Diego, CA), March 20-24, 2022.
3. **He, K.**; Blaney, L. Ion-exchange membranes and fibers as passive samplers for chemically-diverse PFAS (ER20-1073). SERDP & ESTCP Project Meeting on PFAS Ecotoxicity, Analyses, Fate, Transport, Treatment (San Pedro, CA), July 19-22, 2021.
4. Blaney, L.; **He, K.** Ion-exchange membranes and fibers as passive samplers for chemically-diverse PFAS. SERDP and ESTCP Symposium 2020 (virtual), December 1, 2020.
5. Batista Andrade, J.A.; Diaz, E.; Hain, E.; **He, K.**; Blaney, L. Analysis of dissolved organic matter and contaminants of emerging concern to detect leaking sewers in urban streams. Fall 2020 ACS National Meeting (San Francisco, CA / virtual), August 17-21, 2020.
6. Lorah, M.; **He, K.**; Blaney, L. Akob, D.; Shedd, B. Anion-exchange membranes for passive sampling of per- and polyfluoroalkyl substances. Battelle Conference: the 12th International Conference on Remediation of Chlorinated and Recalcitrant Compounds (Portland, OR, USA), June 1-4, 2020.
7. **He, K.**; Feerick, A.; Blaney, L. Anion-exchange membranes for passive sampling of per- and polyfluoroalkyl substances. The 259th American Chemical Society Annual Meeting (Philadelphia, PA, USA), March 22-26, 2020.
8. Feerick, A.; **He, K.**; Blaney, L. Removal of per- and polyfluoroalkyl substances by anion-exchange fibers (Poster). The 259th American Chemical Society Annual Meeting (Philadelphia, PA, USA), March 22-26, 2020.
9. Hopanna, M.; **He, K.**; Prassse, C.; Blaney, L. Photochemical fate of triphenyltin hydroxide in natural and engineered water systems: A study of kinetics, transformation products, and residual toxicity. The 259th American Chemical Society Annual Meeting (Philadelphia, PA, USA), March 22-26, 2020.
10. **He, K.**; Feerick, A.; Blaney, L. Sorption of per- and polyfluoroalkyl substances onto anion exchange passive samplers (Poster). The 40th SETAC North America Annual Meeting (Toronto, ON, CA, USA), November 4, 2019.
11. Hain, E.; **He, K.**; Andrade, J.; Feerick, A.; Timm, A.; Tarnowski, M.; Blaney, L. Occurrence and distribution of UV-filters in water, sediment, and oysters from Chesapeake Bay rivers fed by urban and agricultural areas. The 40th SETAC North America Annual Meeting (Toronto, ON, CA), November 4, 2019.
12. Mitchelmore, C.; **He, K.**; Hain, E.; Younger, R.; Heyes, A.; Gonsior, M.; Conway, A; Blaney, L. Concentration of organic UV-filters in Coral Tissue (*Porites* spp.), Surface Water and Sediment Samples from Oahu, Hawaii. The 29th SETAC Europe Annual Meeting (Helsinki, Finland), May 27, 2019.
13. Hopanna, M.; **He, K.**; Mikal, C.; Blaney, L. Phototransformation of organometallics, an understudied class of increasingly important biologically-active molecules (Poster). 2019 Association of Environmental Engineering and Science Professors Meeting (Tempe, AZ, USA), May 14-16, 2019.
14. Hain, E.; **He, K.**; Andrade, J.; Feerick, A.; Timm, A.; Tarnowski, M.; Blaney, L. Contaminants of emerging concern in Chesapeake Bay rivers fed by urban and agricultural areas. The 257th American Chemical Society Annual Meeting (Orlando, FL, USA), April 3, 2019.

15. Hopanna, M.; **He, K.**; Jones, L.; Blaney, L. Residual toxicity of triphenyltin hydroxide and its transformation products in UV-254 and UV-H_2O_2 processes (Poster). The 257th American Chemical Society Annual Meeting (Orlando, FL, USA), April 2, 2019.
16. **He, K.**; Feerick, A.; Jin, H.; Blaney, L. Retention of per- and polyfluoroalkyl substances during filtration: Implications for proper sample pretreatment. The 257th American Chemical Society Annual Meeting (Orlando, FL, USA), April 1, 2019.
17. **He, K.**; Hain, E.; Timm, A.; Tarnowski, M.; Blaney, L. Occurrence and spatial distribution of contaminants of emerging concern in Chesapeake Bay water, sediment, and oysters. The 39th SETAC North America Annual Meeting (Sacramento, CA, USA), November 8, 2018.
18. Mitchelmore, C.; **He, K.**; Hain, E.; Younger, R.; Heyes, A.; Gonsior, M.; Blaney, L. Concentration of UV-filters Oxybenzone and Octinoxate in coral tissue (*Porites* sp.), surface water, and sediment samples from Oahu, Hawaii. The 39th SETAC North America Annual Meeting (Sacramento, CA, USA), November 8, 2018.
19. Mitchelmore, C.; **He, K.**; Hain, E.; Younger, R.; Heyes, A.; Gonsior, M.; Blaney, L. Concentration of UV-filters in surface water, sediment, and coral tissue (*Porites* sp.) from Oahu, Hawaii. The 11th SETAC Asia-Pacific Meeting (Daegu, South Korea), September, 18, 2018.
20. **He, K.**; Hain, E.; Timm, A.; Tarnowski, M.; Blaney, L. Spatially-resolved occurrence of contaminants of emerging concern in Chesapeake Bay water, sediment, and oysters. The Gordon Research Conference on Environmental Sciences (Holderness, NH), June 26, 2018.
21. **He, K.**; Timm, A.; Blaney, L. Detection of estrogenic hormones and UV-filters in virile crayfish (*Orconectes virilis*) in urban streams. The Society of Freshwater Science Annual Meeting (Detroit, MI, USA), May 24, 2018.
22. **He, K.**; Hain, E.; Timm, A.; Tarnowski, M.; Blaney, L. Spatial analysis of contaminants of emerging concern in Chesapeake Bay water, sediment, and oysters. The 255th American Chemical Society Annual Meeting (New Orleans, LA, USA) March 19, 2018.
23. **He, K.**; Blaney, L. Expanding environmental monitoring campaigns: Contaminants of emerging concern are also present in "unimpacted" watersheds. The 2017 National Environmental Monitoring Conference (Washington, DC, USA), August 7, 2017.
24. **He, K.**; Timm, A.; Blaney, L. Simultaneous determination of UV-filters and estrogens in aquatic invertebrates by modified QuEChERS extraction and liquid chromatography tandem mass spectrometry. The 2017 National Environmental Monitoring Conference (Washington, DC, USA), August 7, 2017.
25. **He, K.**; Timm, A.; Blaney, L. Simultaneous determination of UV-filters and estrogens in aquatic invertebrates by modified QuEChERS extraction and liquid chromatography tandem mass spectrometry. The 13th Annual LC-MS/MS workshop on Environmental and Food Safety (Buffalo, NY, USA), June 12, 2017.
26. Ocasio, D.; Adejumo, H.; Mangalgiri, K.P.; **He, K.**; Blaney, L. UV-driven antibiotic-to-antibiotic transformation pathways and kinetics of sulfonamides (Poster). The 253th American Chemical Society Annual Meeting (San Francisco, CA), April 5, 2017.
27. **He, K.**; Timm, A.; Blaney, L. Bioaccumulation and estrogenicity of hormones and UV-filters in *Procambarus clarkii*. The 253th American Chemical Society Annual Meeting (San Francisco, CA, USA), April 2, 2017.
28. **He, K.**; Rogers, N.; Blaney, L. Using fluorescent dissolved organic matter and contaminants of emerging concern to identify leaking wastewater collection systems. The 253th American Chemical Society Annual Meeting (San Francisco, CA), April 2, 2017.

29. Blaney, L.; Mangalgiri, K.P.; Adejumo, H.A.; Ocasio, D.; **He, K.** Transformation of fluoroquinolone, tetracycline, and sulfonamide antibiotics at 253.7 nm: Generation of antimicrobially active transformation products (Poster). Gordon Research Conference (Holderness, NH, USA), June 26, 2016.
30. **He, K.**; Timm, A.; Welty, C.; Blaney, L. Multi-residue analysis of contaminants of emerging concern (CECs) in water and tissue samples from a freshwater environment by modified QuEChERS extraction followed by SPE-LC-MS/MS (Poster). The 251th American Chemical Society Annual Meeting (San Diego, CA, USA), March 16, 2016.
31. Adejumo, H.; **He, K.**; Blaney, L. Antimicrobial activity of fluoroquinolone, sulfonamide, and tetracycline antibiotics: Implications for environmental relevance (Poster). The 251th American Chemical Society Annual Meeting (San Diego, CA, USA), March 16, 2016.
32. Mangalgiri, K; Adejumo, H.A.; Ocasio, D.; **He, K.**; Blaney, L. Transformation of fluoroquinolone, tetracycline, and sulfonamide antibiotics at 253.7 nm: Generation of antimicrobially active transformation products. The 251th American Chemical Society Annual Meeting (San Diego, CA, USA), March 14, 2016.
33. Rogers, N.; **He, K.**; Welty, C.; Blaney, L. Using EEM analysis to identify and characterize the impacts of leaking wastewater infrastructure on urban water resources (Poster). International Water Association Natural Organic Matter 6 Conference (Malmo, Sweden), September 7 – 10, 2015.
34. **He, K.**; Timm, A.; Welty, C.; Blaney, L. Determination of antibiotics, estrogenic hormones, and UV filters in water, sediment, and crayfish from an urban watershed. The 250th American Chemical Society National Meeting (Boston, MA, USA), August 18, 2015.
35. Adak, A.; Mangalgiri, K.; **He, K.**; Blaney, L. Photochemical UV-H_2O_2 system for oxidation of organoarsenicals in agricultural wastewater (Poster). The 248th American Chemical Society Annual Meeting (San Francisco, CA, USA), August 13, 2014.
36. **He, K.**; Blaney, L. Determination of fluoroquinolone antibiotics in wastewater by solid-phase extraction high performance liquid chromatography with fluorescence detection (Poster). The 248th American Chemical Society National Meeting (San Francisco, CA, USA). August 13, 2014.
37. **He, K.**; Snowberger, S.; Blaney, L. Occurrence and elimination of fluoroquinolone antibiotics in an advanced water reclamation plant. The 248th American Chemical Society Annual Meeting (San Francisco, CA, USA), August 12, 2014.
38. Shah, A.; **He, K.**; Blaney, L. Moxifloxacin in wastewater: Detection and treatment using powdered activated carbon. Annual Biomedical Research Conference for Minority Students (Nashville, TN, USA), November 16, 2013.
39. Snowberger, S.; **He, K.**; Blaney, L. UV-based treatment of fluoroquinolone antibiotics in wastewater. American Institute of Chemical Engineers Annual Meeting (San Diego, CA, USA), November 11, 2013.
40. **He, K.**; Snowberger, S.; Blaney, L. Determination of fluoroquinolone antibiotics in wastewater and transformation by UV and UV-H_2O_2 processes. The 86th Annual Water Environment Federation Technical Exhibition and Conference (Chicago, IL, USA), Special AEESP Session, October 9, 2013.
41. **He, K.**; Blaney, L. Adsorption of fluoroquinolone antibiotics onto activated sludge: Implications for biological wastewater treatment (Poster). The 2012 American Institute of Chemical Engineers Annual Meeting (Pittsburgh, PA, USA), October 30, 2012.

Regional Conferences

1. **He, K.**; Dugan, C.; Feerick, A.; Ellington, M.; Blaney, L. Anion-exchange membranes for passive sampling of per- and polyfluoroalkyl substances. The 2022 Chesapeake Community Research Symposium (Annapolis, MD), June 7, 2022.
2. Hain, E.; **He, K.**; Feerick, A.; Batista-Andrade, J.; Tarnowski, M.; Timm. A.; Blaney, L. Use of geospatial and co-occurrence analyses to identify sources of antibiotics, hormones, and UV filters in the Chesapeake Bay. The 2022 Chesapeake Community Research Symposium (Annapolis, MD), June 7, 2022.
3. Feerick, A.; **He K.**; Blaney, L. Removal of per- and polyfluoroalkyl substances by anion-exchange fibers. UMBC Undergraduate Research and Creative Achievement Day (Baltimore, MD), April 22, 2020.
4. Diaz, E.; Batista-Andrade, J.A.; Hain, E.; Rose, M.; **He, K.**; Blaney, L. Analysis of dissolved organic matter in urban streams by fluorescence excitation-emission matrices. UMBC Undergraduate Research and Creative Achievement Day (Baltimore, MD), April 22, 2020.
5. Diaz E., Batista-Andrade J., Hain, E.; **He, K.**; Blaney, L. Optimization of excitation-emission fluorescence spectroscopy for characterization of dissolved organic matter in Baltimore streams (Poster). UMBC Summer Undergraduate Research Fest (SURF) (Baltimore, MD), August 7, 2019.
6. Feerick, A.; Hain, E.; **He, K.**; Blaney, L. Spatiotemporal analysis of contaminants of emerging concern in the Choptank River. Spring 2019 ACS Mid-Atlantic Regional Meeting (Baltimore, MD), May 30, 2019.
7. Hopanna, M.; **He, K.**; Jones, L.; Blaney, L. Residual toxicity of triphenyltin hydroxide and its transformation products in UV-254 and UV-H_2O_2 processes. Chesapeake Section of the American Water Works Association spring meeting (Crofton, MD), May 9, 2019.
8. Adams, D.; **He, K.**; Hain, E.; Andrade, J.; Feerick, A.; Blaney, L. Accumulation of Organic Sunscreen Chemicals in Sharks and Teleost Fishes (Poster). Indian River Lagoon Symposium 2019 (Melbourne, FL), February 7, 2019.
9. Feerick, A.; Hain, E.; **He, K.**; Blaney, L. Detection of Contaminants of Emerging Concern in Water and Oysters from the Potomac Rivers (Poster). Undergraduate Research Symposium in the Chemical and Biological Sciences (Baltimore, MD), October 22, 2018.
10. **He, K.**; Hain, E.; Blaney, L. Seasonal analysis of contaminants of emerging concern in the Gwynns Falls watershed. Baltimore Ecosystem Study Annual Meeting (Baltimore, MD), October 25, 2017.
11. **He, K.**; Blaney, L. Occurrence and impact of a wide range of antibiotics, hormones, and UV-filters in the environment: analytical methods development and ecotoxicological effect investigations. The 39th UMBC Annual Graduate Research Conference (Baltimore, MD), micro-talk, March 29, 2017.
12. Adejumo, H.A.; **He, K.**; Blaney, L. Impact of antibiotic contaminants on environmental microorganisms: antimicrobial activity and antimicrobial resistance in natural and engineered environments (Poster). Society of Toxicology 56th Annual Meeting and ToxExpo (Baltimore, MD), March 15, 2017.

13. Adejumo, H.; **He, K.**; Mangalgiri, K.; Blaney, L. Identifying implications of antibiotics during ultraviolet disinfection: antimicrobial activity and antimicrobial resistance in wastewater treatment. Tri-Association Conference (Ocean City, MD), August 31, 2016.
14. **He, K.**; Timm, A.; Welty, C.; Blaney, L. Analysis of multiple estrogens and UV filters in biota tissue samples by a simple liquid extraction followed by SPE-LC-MS/MS. The 38th UMBC Annual Graduate Research Conference (Baltimore, MD), March 23, 2016.
15. Hopanna,M.; **He,K.**; Mangalgiri, K.; Steinly, S.; Blaney, L. Development of novel LC-DAD-MS/MS analytical methods for organometallic chemicals (Poster). The 38th UMBC Annual Graduate Research Conference (Baltimore, MD), March 23, 2016.
16. Adejumo, H.; **He, K.**; Blaney, L. Fluoroquinolone-resistant bacteria and gene distribution in a Maryland wastewater treatment plant and receiving water. Naval Academy Science and Engineering Conference (Annapolis, MD), November 8-10, 2015.
17. **He, K.**; Timm, A.; Welty, C.; Blaney, L. Occurrence of estrogenic hormones and UV filters in an urban watershed in Baltimore, Maryland. Baltimore Ecosystem Study Annual Meeting (Baltimore, MD), October 20, 2015.
18. Adejumo, H.; **He, K.**; Blaney, L. Fluoroquinolone-resistant bacteria and gene distribution in a Maryland wastewater treatment plant and receiving water (Poster). The 18th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences (Baltimore, MD), October 3, 2015.
19. Adejumo, H.A.; **He, K.**; Blaney, L. Fluoroquinolone-resistant bacteria and gene distribution in a Maryland wastewater treatment plant and receiving water (Poster). UMBC Summer Undergraduate Research Fest (Baltimore, MD), August 5, 2015.
20. Adejumo, H.A.; **He, K.**; Blaney, L. Occurrence and distribution of quinolone resistance in Baltimore wastewater. BEACON Center for the Study of Evolution in Action seminar (video conference), July 10, 2015.
21. Adejumo, H.A.; **He, K.**; Blaney, L. Occurrence and distribution of quinolone resistance in Baltimore wastewater. UMBC Undergraduate Research and Creative Achievement Day (Baltimore, MD), April 22, 2015.
22. **He, K.**; Blaney, L. Simultaneous determination of antibiotics, estrogens, and UV filters in a watershed near Baltimore. The 37th UMBC Annual Graduate Research Conference (Baltimore, MD), March 25, 2015.
23. Snowberger, S.; **He, K.**; Soares, A.D.; Blaney, L. Identification of potent transformation products of fluoroquinolone antibiotics formed during water treatment. UMBC Undergraduate Research and Creative Achievement Day (Baltimore, MD), April 23, 2014.
24. **He, K.**; Blaney, L. Adsorption and biodegradation of fluoroquinolone antibiotics in the activated sludge treatment. The 36th UMBC Annual Graduate Research Conference (Baltimore, MD), March 16, 2014.
25. Rosi-Marshall, E.J.; Bechtold, H.A.; Shogren, A.; Kelly, J.J.; Rojas, M.; Snow, D.; Blaney, L.; **He, K.** Occurrence and ecological effects of pharmaceuticals in BES streams (Poster). Baltimore Ecosystem Study Annual Meeting (Baltimore, MD), October 22, 2013.
26. **He, K.**; L. Blaney, Solid-phase extraction and HPLC determination of fluoroquinolones in Baltimore area wastewater. Baltimore Ecosystem Study Annual Meeting (Baltimore, MD). October 22, 2013.
27. **He, K.**; Perera, S.; Blaney, L. Adsorption of antibiotics onto activated sludge solids and powdered. Tri-Association Annual Conference (Ocean City, MD), August 30, 2013.

28. Shah, A.; **He, K.**; Blaney, L. Moxifloxacin in wastewater: Detection and treatment using powdered activated carbon (Poster). UMBC Summer Undergraduate Research Fest (Baltimore, MD), August 7, 2013.
29. **He, K.**; Perera, S.; Blaney, L. Adsorption of fluoroquinolone antibiotics onto powdered activated carbon and activated sludge. The 35th UMBC Annual Graduate Research Conference (Baltimore, MD), February 20, 2013.

Invited Presentation

1. Blaney, L.; Hain, E.; Feerick, A.; **He, K.** UV filter occurrence in Chesapeake Bay water, sediment, and aquatic organisms. The National Academies of Sciences, Engineering, and Medicine, Meeting on Environmental Impact of Currently Marketed Sunscreens and Potential Human Impacts of Changes in Sunscreen Usage (virtual), May 27, 2021.
2. Blaney, L.; Hain, E.; Feerick, A.; **He, K.** No shade: UV filters are widely present in water, sediment, and invertebrates. Spring 2021 ACS National Meeting, Great Achievements in ES&T: James J. Morgan Environmental Science & Technology Early Career Award Symposium (2021) James J. Morgan Environmental Science & Technology Early Career Award 2021 (virtual), April 5-16, 2021.
3. **He, K.** Clean Water and Wastewater Disinfection. MEES 698T/498T/ ENCE 489 Special Topics section in Marine and Environmental Biotechnology (Instructor: Dr. J. Sook Chung), April 19, 2021.
4. **He, K.** Clean Water and Wastewater Treatment. MEES 698T/498T/ ENCE 489 Special Topics section in Marine and Environmental Biotechnology (Instructor: Dr. J. Sook Chung), April 8, 2020.
5. **He, K.**; Hain, E.; Andrade, J.; Feerick, A.; Timm, A.; Tarnowski, M.; Blaney, L. Occurrence of antibiotics, estrogenic hormones, and UV-filters in water, sediment, and oyster tissue from the Chesapeake Bay. OneNOAA Science Seminar Series (Silver Spring, MD, USA), November 20, 2019.

Mentorship

Doctoral students

2018 – present	Jahir Antonio Batista-Andrade
2016 – 2022	Ethan Hain

Master's students

2021 – present	Marriah Ellington
2020 – 2022	Caityln Dugan, USGS, Chesapeake Ecosystem Study Unit
2019 – 2020	Haley Hartney
2012 – 2013	Shreemal Perera, Transportation Engineer at Maryland State Highway Administration

Visiting students

2018 Catarina Santos, Operations Trainee at Philip Morris International
2015 Rita Costa, Management Trainee at Jerónimo Martins
2014 Ana Dulce Soares, Técnica de Qualidada at PhD trials

Undergraduate students

2021 – present Margarete Siao, BS student at UMBC
2019 – 2020 Sumana Peddibhotla, BS student at UMBC
2018 – 2020 Anna Feerick, PhD student at University of California, Davis
2013 – 2016 Hollie Adejumo, PhD student at University of Michigan
2015 – 2016 Jason Hughes, PhD student at Vanderbilt University School of Medicine
2013 – 2015 Apurva Shah, Electronics Engineer at United States Department of Defense

High school students

2018 Hongyue Jin, undergraduate student at University of California, San Diego

National and Local Service

National service

2017 – present Journal Reviewer (have reviewed 80+ manuscripts)
Ceramics International
Chemosphere
Environmental Science and Pollution Research
Journal of Environmental Engineering
Journal of Environmental Management
Journal of Hazardous Materials
MethodsX
Reviews in Chemical Engineering
Science of the Total Environment

2022 Student presentation reviewer, Division of Environmental Chemistry, ACS
2017 Student presentation reviewer, Division of Environmental Chemistry, ACS

University/community service

2015 – 2016 Committee Chair, Graduate Student Association Grants Committee, University of Maryland Baltimore County
2013 – 2016 Senator, Graduate Student Association at University of Maryland Baltimore County
2013 – 2016 Executive Board Member, Chemical Engineering Graduate Students Association, University of Maryland Baltimore County
2007 – 2008 Chair, New Hope Student Association at Tianjin University of Science & Technology

2006 – 2007	Member, New Hope Student Association at Tianjin University of Science & Technology
2008	Volunteer, Living Conditions in a Rural Area, Huanggunian, Yanshan, Hebei Province, China
2007	Volunteer, Primary Education in a Rural Area, Gouhebei, Jizhou, Tianjin City, China
2006	Volunteer, Farmer Organizations in a Rural Area, Shihekou, Liaocheng, Shangdong Province, China

News and Media

1. Bay Journal article, "Researchers find sunscreen chemicals in Chesapeake oysters" by Timothy Wheeler, September 11, 2019. Available at: https://www.bayjournal.com/news/fisheries/researchers-find-sunscreen-chemicals-in-chesapeake-oysters/article_71612a73-bf02-5037-8238-fe005b76b618.html
2. UMBC News article, "UMBC's Lee Blaney and federal, state partners publish landmark study on contaminants in the Chesapeake Bay" by Megan Hanks, August 26, 2019. Available at: https://news.umbc.edu/umbcs-lee-blaney-and-federal-state-partners-publish-landmark-study-on-contaminants-in-the-chesapeake-bay/
3. Science Daily article, "New study measures UV-filter chemicals in seawater and corals from Hawaii" by University of Maryland Center for Environmental Science, April 1, 2019. Available at: https://www.sciencedaily.com/releases/2019/04/190401121805.htm
4. UMBC News article, "Researching" to "researcher": UMBC students share why mentoring is the key" by Megan Hanks, April 18, 2019. Available at: https://news.umbc.edu/researching-to-researcher-umbc-students-share-why-mentoring-is-the-key/
5. United States Department of Agriculture. "Featured Research Program in Provide Abundant Clean Water. "Contaminants in Water", accessed on July 17, 2018. Available at: https://www.nrs.fs.fed.us/featured/2018/06/.
6. UMBC News article, "Ke He extends water safety research through UM School of Medicine postdoc fellowship", April 15, 2018. Available at: https://news.umbc.edu/ke-he-extends-water-safety-research-through-um-school-of-medicine-postdoc-fellowship/
7. *The Conversation*, "There's a new generation of water pollutants in your medicine cabinet", April 20, 2017. Available at:https://theconversation.com/theres-a-new-generation-of-water-pollutants-in-your-medicine-cabinet-71260

Professional Society Membership

2018 – present	Member, Chesapeake Water Environment Association (CWEA)
2016 – present	Member, Society of Environmental Toxicology and Chemistry (SETAC)
2012 – present	Member, American Chemical Society (ACS)
2013 – 2014	Member, Water Environment Federation (WEF)
2012 – 2014	Member, American Institute of Chemical Engineers (AIChE)

I hereby certify that the above details are true and accurate to the best of my knowledge:

Ke He

Ke He July 10, 2022