Alex R. Fiore
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U.S. Geological Survey
New Jersey Water Science Center
3450 Princeton Pike, Suite 110
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Expertise:
Aquifer characterization, hydrogeologic frameworks, groundwater-surface water interactions, groundwater modeling; applied to studies of contaminant transport, saltwater intrusion, sea level rise, coastal hydrology, groundwater availability and quantity, land subsidence, and landslide initiation.

Professional Employment:
2023-present, Acting Groundwater Specialist, USGS New Jersey Water Science Center, Lawrenceville, NJ
2022-present, Acting Groundwater Specialist, USGS California Water Science Center, Sacramento, CA
2019-2023, Adjunct Professor, The College of New Jersey, Physics Department, Ewing NJ
2014-present, Hydrologist, USGS New Jersey Water Science Center, Lawrenceville, NJ
2012-2014, Intern, USGS New Jersey Water Science Center, Lawrenceville, NJ

Education:
2014, M.S., Geological Sciences, Rutgers University, New Jersey
2011, B.S., Geological Sciences, Rutgers University, New Jersey

Professional Committees:
New Jersey Water Supply Advisory Council, Advisor
New Jersey Geologic Mapping Advisory Committee
Geological Association of New Jersey, Executive Board

Reports and Publications:

- Senior, L.A., and Fiore, A.R., 2024, Results of 2018–19 water-quality and hydraulic characterization of aquifer intervals using packer tests and preliminary geophysical-log correlations for selected boreholes at and near the former Naval Air Warfare Center Warminster, Bucks County, Pennsylvania: U.S. Geological Survey Open-File Report 2024–1007, 136 p., https://doi.org/10.3133/ofr20241007.
- Needham, T.P., Fiore, A.R., Ator, S.W., Raffensperger, J.P., Smith, M.B., Bellmyer, N.M., Dugan, C.M., and Morel, C.J., 2023, Geology, hydrology, and groundwater contamination in the vicinity of Central Chemical facility, Hagerstown, Maryland: U.S. Geological Survey Scientific Investigations Report 2022–5011, 62 p., https://doi.org/10.3133/sir20225011.
- Fiore, A.R., Imbrigiotta, T.E., and Wilson, T.P., 2023, Distribution of chlorinated volatile organic compounds and per- and polyfluoroalkyl substances in groundwater and surface water at the former Naval Air Warfare Center, West Trenton, New Jersey, 2018: U.S. Geological Survey Open-File Report 2023–1022, 81 p., https://doi.org/10.3133/ofr20231022.
- Fiore, A.R., and Colarullo, S.J., 2023, Simulation of regional groundwater flow and advective transport of per- and polyfluoroalkyl substances, Joint Base McGuire-Dix-Lakehurst and vicinity, New Jersey, 2018: U.S. Geological Survey Open-File Report 2022–1112, 41 p., 2 pls., https://doi.org/10.3133/ofr20221112.
- Fiore, A.R., Witzigman, C.M., and Reiser, R.G., 2021, Hydrogeology and gain/loss assessment of two lakes contaminated with per- and polyfluoroalkyl substances, vicinity of Joint Base McGuire-Dix-Lakehurst, New Jersey, 2020–21: U.S. Geological Survey Scientific Investigations Report 2021–5107, 24 p.

- Senior, L.A., Fiore, A.R., and Bird, P.H., 2021, Hydrogeologic framework, water levels, and selected contaminant concentrations at Valmont TCE Superfund Site, Luzerne County, Pennsylvania, 2020: U.S. Geological Survey Open-File Report 2021–1093, 80 p., https://doi.org/10.3133/ofr20211093.
- Carleton, G.B., Charles, E.G., Fiore, A.R., and Winston, R.B., 2021, Simulation of water-table response to sea-level rise and change in recharge, Sandy Hook unit, Gateway National Recreation Area, New Jersey: U.S. Geological Survey Scientific Investigations Report 2020–5080, 91 p.
- Imbrigiotta, T.E., and Fiore, A.R., 2021, Distribution of chlorinated volatile organic compounds and per- and polyfluoroalkyl substances in monitoring wells at the former Naval Air Warfare Center, West Trenton, New Jersey, 2014–17: U.S. Geological Survey Open-File Report 2020–1105, 107 p.
- Ashland, F.X., Reilly, P.A., and Fiore, A.R., 2021, Capturing the transient hydrological response in sandy soils during a rare cloudburst associated with shallow slope failures; a case study in the Atlantic Highlands, New Jersey, USA: Quarterly Journal of Engineering Geology and Hydrogeology, v. 54, n. 4, 10 p.
- Fiore, A.R., and Lacombe, P.J., 2020, Groundwater levels and generalized potentiometric surfaces, former Naval Air Warfare Center, West Trenton, New Jersey, 2018: U.S. Geological Survey Open-File Report 2020–1016, 28 p.
- Fiore, A.R., 2020, Regional hydrostratigraphic framework of Joint Base McGuire-Dix-Lakehurst and vicinity, New Jersey, in the context of perfluoroalkyl substances contamination of groundwater and surface water: U.S. Geological Survey Open-File Report 2019–1134, 42 p.
- Fiore, A.R., Voronin, L.M., and Wieben, C.M., 2018, Hydrogeology of, simulation of groundwater flow in, and potential effects of sea-level rise on the Kirkwood-Cohansey aquifer system in the vicinity of Edwin B. Forsythe National Wildlife Refuge, New Jersey: U.S. Geological Survey Scientific Investigations Report 2017-5135, 59 p., https://doi.org/10.3133/sir20175135.
- Ashland, F.X., Fiore, A.R., and Reilly, P.A., 2017, Characterizing meteorological and hydrologic conditions associated with shallow landslide initiation in the coastal bluffs of the Atlantic Highlands, New Jersey, in De Graff, J.V., and Shakur, A., eds. Landslides: Putting Experience, Knowledge and Emerging Technologies into Practice: Proceedings of the 3rd North American Symposium on Landslides, Roanoke, V.A., June 4–8, 2017, Association of Environmental & Engineering Geologists Special Publication 27, p. 461–472, ISBN: 978-0-9897253-7-8
- Reilly, P.A., Ashland, F.X., and Fiore, A.R., 2017, Landslide monitoring in the Atlantic Highlands area, New Jersey: U.S. Geological Survey Fact Sheet 2017–3068, 4 p.
- Fiore, A.R., 2016, Hydrogeologic barriers to the infiltration of treated wastewater at the Joint Base McGuire-Dix-Lakehurst Land Application Site, Burlington County, New Jersey: U.S. Geological Survey Scientific Investigations Report 2016–5065, 83 p.

Abstracts:

- Fiore, A.R., and Needham, T.P., 2021, Epikarst and the transport of groundwater contaminants: An overview: *in* Hozik, M.J. Karst Geology of NJ and Vicinity: Revisited: Conference Proceedings for the 37th Annual Meeting of the Geological Association of New Jersey, October 15-16, 2021, p. 15-18
- Goode, D.J., Imbrigiotta, T.E., Hseih, P.A., Kiekkaefer, R.L., Masse, M.M., Allen-King, R.A., Fiore, A.R., Lacombe, P.J., Lorah, M.M., Akob, D.M., Shapiro, A.M, Haase, K.B., and Tiedeman, C.R., 2017, In-situ characterization of processes controlling long-term release of CVOCs from low-permeability zones: National Groundwater Association Conference on Fractured Rock and Groundwater, Burlington, VT, October 2-3, 2017.
- Imbrigiotta, T.E., Goode, D.J., Hseih, P.A., Allen-King, R.A., Kiekkaefer, R.L., Masse, M.M., Fiore, A.R., Lacombe, P.J., Lorah, M.M., Akob, D.M., Shapiro, A.M, Haase, K.B., and Tiedeman, C.R., 2017, Field measurement of sorption coefficients and rates of diffusion, biodegradation, and abiotic degradation in the rock matrix: National Groundwater Association Conference on Fractured Rock and Groundwater, Burlington, VT, October 2-3, 2017.

- Rucker, C.R., Crawford, M.M., Ashland, F.X., and Fiore, A.R., 2017, Electrical resistivity imaging of a multiple rockslide, Pittsburgh, PA: Geological Society of America Abstracts with Programs, Vol. 49, No. 2, doi: 10.1130/abs/2017NE-291280
- Fiore, A.R., Wieben, C.M., and Voronin, L.M., 2016, Sea-level rise- induced changes to the shallow groundwater flow system underlying coastal wetlands, Edwin B. Forsythe National Wildlife Refuge and vicinity, New Jersey: Rutgers Climate Symposium, November 18, 2016, Piscataway N.J.
- Carleton, G.B., Charles, E., and Fiore, A.R., 2016, Effects of sea-level rise and changes in recharge caused by climate change on shallow groundwater, Gateway National Recreation Area, Sandy Hook Unit, New Jersey: Rutgers Climate Symposium, November 18, 2016, Piscataway N.J.
- Fiore, A.R., 2016, Aquifer heterogeneity and the importance of calibrating ground-penetrating radar data in environmental investigations: in Gagliano, M.P. and Macaoay Ferguson, S., eds.,Shallow Subsurface Geophysical Applications in Environmental Geology: 33rd Annual Field Guide and Conference Proceedings of the Geological Association of New Jersey, October 14-15, 2016, Trenton, N.J., p. 59-65.
- Fiore, A.R., and Reilly, T.J., 2015, Verification of geophysical and hydraulic testing using sediment cores to identify hydrogeologic limitations of wastewater infiltration land application facilities prior to construction: lessons learned within the New Jersey Coastal Plain: Geological Society of America Abstracts with Programs. Vol. 47, No. 7, p.659.
- Fiore, A.R., 2014, Can slug tests detect biofouling in biostimulation wells?: Geological Society of America Abstracts with Programs. Vol. 46, No. 2, p.123.

Invited Professional Presentations:

- 2023, Barnegat Bay Partnership Science and Technical Advisory Committee, virtual meeting
- 2023, Association of Environmental and Engineering Geologists, New York-Philadelphia Chapter, Somerset, NJ
- 2023, Mid-Atlantic Vertical Land Motion Workshop, Hampton, VA
- 2022, U.S. Environmental Protection Agency Region 3, Philadelphia, PA
- 2020, New Jersey Water Monitoring Council, virtual meeting
- 2018, USGS New Mexico Water Science Center, Albuquerque, NM
- 2018, New Jersey Department of Environmental Protection Recent Advances in New Jersey Geology seminar, Trenton, NJ
- 2018, Field Conference of Pennsylvania Geologists, Pre-Conference Field Trip, Center Valley, PA
- 2016, New Jersey Department of Environmental Protection Recent Advances in New Jersey Geology seminar, Trenton, NJ