**Jenberu L. Feyyisa, Ph. D.**

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**OBJECTIVE** A career position in Civil/Environmental /Water resources research and engineering

**EDUCATION Doctor of Philosophy (Ph.D.) Civil and Environmental Engineering**

**(Infrastructure and Environmental Systems), December 2017**

University of North Carolina at Charlotte, Department of Civil and Environmental Engineering

 *Dissertation: Engineered water repellency for infiltration control in coal fly ash.*

**Master of Science (M.S.) Civil and Environmental Engineering, May 2014**

North Carolina Agricultural & Technical State University,

Department of Civil, Architectural and Environmental Engineering

*Thesis: A stochastic approach to modeling groundwater flow and contaminant plume path for Buffalo creek**watershed, NC.*

**Bachelor of Science (B.S.) Hydraulics Engineering, February 1992**

Arba Minch Water Technology University, Ethiopia

**PROFILE Environmental System Engineering and Modeling**

Stream and river characteristics study and trend analysis, Groundwater flow modeling, contaminant fate and transport, material testing and evaluation, surface water quality modeling, hydrologic systems, spatial statistics, surface energy, solid waste management strategy, and ecological engineering

 **Hydraulic Design**

Water supply structures and networks, drainage structures, storm water management, water treatment and wastewater treatment plants, irrigation systems, watershed restorationstructures

 **Construction Management**

Construction supervision**,** bill of quantities, cost estimate, project planning and control, material testing, scheduling, contract administration, technical drawings reading and specifications

**EXPERIENCE Research and Development Associate Staff,** *Biological and Environmental Systems Science Directorate, Oak Ridge National Laboratory, ORNL (August 2021- Date)*

* Research stream low flow prediction using large scale climate mode
* Study opportunity of power generation from non-powered dams across USA
* Research on environmental flow requirement from storage dams using ecological parameters
* Work with team on mercury remediation at East Fork Creek (Tennessee)

**Environmental Program Consultant/Senior Water Resources Planning Engineer,** *North Carolina Department of Environmental Quality (January, 2018- August, 2021)*

* Study and interpret Low flow characteristics of streams across the state (155 gage stations)
* Organize and analyze water quantity and quality data for 17 river basins of the state
* Conduct a state-wide water quality and quantity trend analysis
* Study and present alleviation strategy for impaired rivers and streams
* Evaluate and analyze state’s current and future surface and groundwater water supply sources and use

**Research Assistant,** *University of North Carolina at Charlotte (2014 – 2017)*

* Conduct laboratory-based research to generate, model (numerical, analytical, and statistical), and validate data for different types of coal fly ash to become water repellent using organo-silanes for use as hydraulic barriers in different engineering applications.
* Research on capillary breakthrough pressure and infiltration resistance for a modified coal fly ash using the Washburn equation, modify and use the equation.
* Develop performance models based on chemical and mineralogical composition of coal fly ash, as well as organo-silane chemistry.

**Research & Teaching Assistant,** *North Carolina A&T State University, (2012-2014)*

* Conducted a research entitled comparison of stochastic and deterministic approach in Groundwater flow and Contaminant Transport Modeling for Buffalo sub-watershed (NC)
* Conducted a research on the stream water quality (DO) for north buffalo sub-watershed (NC)
* Conducted a study on alternative solid waste management strategy for developing countries (Nairobi case study, Kenya)
* Responsible for grading homework and assignments, (CAEE 364, CIEN 510)

 **Senior Engineer,** *JL General Contractor, 2003-2008, Ethiopia*

* Conducted detailed study, design and prepared drawings, bills of quantities and cost estimate for city and urban water supply projects, water well drilling works, drainage ditches, flood control and integrated watershed development projects.
* Supervised project construction and managed contract agreements of the company as a chief engineer role
* Assessed materials and labor costs and prepared bid documents for surface water supply, water well drilling works, buildings, access road, drainage ditches, levees, generators and pumps for Government and NGOs owned projects

**Project Officer/Engineer,** *ESRDF (World Bank / IMF Fund), 1998-2003, Ethiopia*

* Appraised and approved detailed technical feasibility of groundwater and surface water sourced and environmental protection projects proposals from all zonal offices of the region
* Conducted detail study and design of small earth fill dams, cattle troughs in arid and semi-arid zones of the region
* Supervised and monitored projects bid planning, procedures, construction, contract administration and managed project cost on behalf of the client
* Conducted measurements, quantity surveying, approved well log reports and proposed payments.

**Civil Engineer,** *Water Resources Development and Environmental Protection Bureau 1992- 1997, Ethiopia*

* Conducted detailed study, design and prepared drawings of diversion weirs for water supply and irrigation (masonry, concrete, Gabion), small scale treatment plants, pipe networks, generators and pumps, irrigation canals, chutes, gates, bridges, flood control dams (earth) and other hydraulic structures
* Prepared bill of quantities, specifications and project cost estimates
* Supervised and monitored water supply, irrigation, drainage ditches, bridges, and flood control project construction, quantity surveying and material tests

**SPECIALIZED**

**SOFTWARE** MODFLOW, GW Vistas, SWToolbox, R, ArcGIS, Power BI, MT3D, Data Mining, Spatial Statistics, MODPATH, PEST, Goniometer, Fluorescent Microscope, Simulink, QUAL2K, HEC-RAS, AutoCAD, MATLAB

**ATTRIBUTES**  Ability to work independently or in a team

 Very strong work ethic, dependable, task oriented, quick learner

**PROFESSIONAL M**embership, American Society of Civil Engineers, ASCE

 **M**embership, Advanced Earth and Space Science, AGU

**MEMBERSHIP** Individual membership, American Coal Ash Association, ACAA

**Honors and** John Faber 2016/17 Scholarship Winner (2nd Place), ACAAEF

**Awards** Selected as an outstanding student and for an honorable mention in Ash at Work Magazine, Educational Foundation, ACAA,

https://www.acaa-usa.org/About-ACAA/Educational-Foundation

UNC Charlotte Graduate Assistance Support Plan (GASP) winner (for three years)

**POSTERS AND**

**CONFERENCE**

**PRESENTATIONS**

“A Dynamic Contact Angle Measurement Technique for Water-Repellent Coal Fly Ash (CFA)” Presented atGeo-Chicago 2016, Sustainability, Energy and the Geoenvironment Chicago, Illinois, August 14–18, 2016. Sponsored by the Geo-Institute of ASCE.

“A modified wettability and dynamic contact angle measurement technique for water repellent coal fly ash ”. TRB committee on resource conservation and recovery and Geo-Environmental process, 2016 summer workshop Asheville, North Carolina, USA 26-29 July 2016.

“QUAL2K Water Quality Analysis and Source Locations Identification: A Case Study of North Buffalo Stream.” 7th International Conference on Environmental Science and Technology Houston, Texas, USA 9-13 June 2014.

“Alternative Management Strategy of Solid Waste in Developing Countries, Nairobi Kenya Case Study” Proceedings of 28th International Conference on Solid Waste Technology and Management Philadelphia, PA USA March 10-13, 2013

“Extent and fate of contaminant in the shallow aquifer of Buffalo Creek, Greensboro NC ” National Conference on Advances in Environmental Science and Technology Greensboro, North Carolina, USA September 12, 2013

**PUBLICATIONS**

Feyyisa, J. Kao, Shih-Chie, DeNeale, S. Prachei, B. “Stream low flow prediction using large scale climate modes” (Submitted)

 **“**Environmental flow release requirement from power generating dams based on ecological and physical parameters” (Manuscript under preparation)

DeNeale, Scott , Hansen, Carly, **Feyyisa, Jenberu**, Oladosu, Gbadebo A. “An Assessment of

Non-Powered Dam Hydropower Development Opportunities in the United States”.

<https://www.osti.gov/biblio/1890326>

DeNeale, Scott, Hansen, Carly, Oladosu, Gbadebo, **Feyyisa, Jenberu**.” NPD development

 opportunities assessment”

https://resolution.ornl.gov/pub/preview/175954

Feyyisa, J. and Daniels J., Pando, M., Ogunro, V. (2019). “Relationship between breakthrough

 pressure and contact angle for organo-silane treated coal fly ash”.

<https://doi.org/10.1016/j.eti.2019.100332>

Feyyisa, J. and Daniels J. (2019). “The role of ash mineralogy on breakthrough pressure and contact angle: a statistical evaluation, Coal Combustion and Gasification Products

 <http://www.coalcgp-journal.org/papers/2019/1946-0198-11-1-45.pdf>

Feyyisa, J., Daniels, J., Pando, M. (2017).” Contact Angle Measurements for Use in Specifying Organo-silane-Modified Coal Combustion Fly Ash

http://ascelibrary.org/doi/abs/10.1061/ (ASCE) MT.1943-5533.0001943

Daniels, L., Pando, M., Ogunro, V., **Feyyisa, J**., Dumenu, L., Moid, M., Rodriguez, C. “Water Repellency for Ash Containment and Reuse”.

https://erefdn.org/water-repellency-for-ash-containment-and-reuse/

Feyyisa, J. L. (2017). “Engineered water repellency for infiltration control in coal fly ash.” Dissertations & Theses @ University of North Carolina Charlotte. https://librarylink.uncc.edu/login?url=https://search-proquest-com.librarylink.uncc.edu/

Feyyisa, J. (2017). “Organo-Silane Modified Coal Fly Ash for Use and Leachate Proof Disposal” Ash at Work-ACAA, 47-50

Feyyisa, J., and Daniels, J. (2016). "A Dynamic Contact Angle Measurement Technique for Water-Repellent Coal Fly Ash (CFA)." Geo-Chicago 2016, American Society of Civil Engineers, 925-938.

http://ascelibrary.org/doi/abs/10.1061/9780784480144.092

Feyyisa, J., Jha, M., and Chang, S.-Y. (2016). "Groundwater Flow Modeling in the Shallow Aquifer of Buffalo Creek, Greensboro." Proceedings of the 2013 National Conference on Advances in Environmental Science and Technology

http://link.springer.com/chapter/10.1007/978-3-319-19923-8\_10

**REFERENCES**

1. Kao, Shih-Chieh (Group Leader) Water Resource Science and Engineering Group, ORNL. kaos@ornl.gov

2. Ian McMillan (Chief) River Basin Planning Branch, DEQ E-mail: ian.mcmillan@ncdenr.gov

3. John L. Daniels (Professor and Chair), Department of Civil and Environmental Engineering, UNC Charlotte E-mail: jodaniel@uncc.edu