

2006-07 TWRI Mills Scholarship Program

Application Form

Name of Student and TAMU Student ID Number

Oke Nwaneshiudu

Name and Contact Information for Faculty Advisor or Committee Chair

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Proposed research, emphasizing how it will address a water resources-related concern

The core of the research for my dissertation will be centered on using the Visual MODFLOW program, one of the most commonly used Groundwater modeling software to assess and study fresh water availability in a Transboundary Aquifer system. Using computer models as tools in groundwater management is an undeniable necessity. Aquifer systems can contain mixtures of brackish waters and freshwaters and these systems need to be modeled and managed to determine fresh water availability. The aquifer system and area of concern that I intend to study is the Hueco Bolson aquifer, an aquifer system that underlies the US/Mexico border at the El-Paso/Ciudad Juarez area. Currently, The a groundwater availability and flow model developed by the USGS (United States Geological Survey) determines water availability and water budgets for regions in this aquifer. However, the groundwater system of the aquifer has been determined to be a mixture of brackish and freshwater, thus a solute transport model is needed to better assess fresh water availability of the area. I have two major goals for this challenging endeavor. First, I would like to enhance the current USGS MODFLOW 2000 based groundwater flow model created for the Hueco Bolson aquifer system to include solute transport. This will enable more accurate determinations of the freshwater availability in the area. Second, I would like to recreate the current MODFLOW 2000 based model in a Visual MODFLOW environment which will allow for a more robust and user friendly modeling environment for the current USGS model. I am very proud to be student and researcher in the Water Management and Hydrologic Sciences program of Texas Water program at Texas A&M University and with the additional support of the TWRI mills scholarship program, I believe I will be successful in completing the goals I have set out to complete.

Proposed use of funds resulting from this scholarship

I hope to use the funds from this scholarship, If I am selected, to aid in purchases of some needed resources such as, a laptop for my research up-to-date software packages of groundwater modeling software and models, books for upcoming classes, educational fees and related expenses.

Intended career path

My most desired career aspiration is a job in consulting in the Texas water industry. I intend to be on the forefront on understanding solving critical problems, especially those dealing with source water availability, modeling and management in Texas.