A successful decadal partnership between IRIS and Fort Valley State University and its impacts on Diversity, Equity, and Inclusion (DEI) in the geosciences.

Aditya Kar
Fort Valley State University

The digital age has ushered the largest and fastest creation of wealth ever recorded in human history. However, at the same time the digital gap has widened at an alarming rate. Additionally, Covid-19 pandemic issues has disproportionately affected people of color and disadvantaged populations together with the Historically Black Colleges/Universities (HBCUs) and Minority Serving Institutions (MSIs) that serve them. Fort Valley State University (FVSU) is a rural HBCU in middle Georgia, where regional challenges caused by poverty and inequity contribute to minimal production of STEM graduates and STEM teachers from the local communities. Geoscience is the least diversified field of all STEM degrees earned by African Americans, at least partially due to the limited geoscience learning opportunities at HBCUs. Despite its geographical location, FVSU, has a very successful Geoscience Program. IRIS – NSF organization has a very successful Summer Internship Program in Geophysics. FVSU has a sole geoscience professor housed in the chemistry department who prepares students for the IRIS internship program. In a decadal IRIS-FVSU partnership each year from 2011 to 2021, a URM student from FVSU has interned with IRIS. The partnership has yielded 10 geoscientists, an engineer, and a chemist with an outstanding 100% graduation rate! Building on the decadal collaboration, FVSU geoscientist has partnered with a departmental colleague, a computational chemist, they in turn have joined hands with IRIS and together they have secured NSF GEOPAths grant to build a summer program at FVSU. The following objectives of the proposal have been met:

1. In the first two years of the GEOPAths program over 600 URM students in Chemistry labs were exposed to Geophysics Learning Modules being developed as part of a SAGE diversity initiative.
2. Established a new summer geoscience research program through partnership with IRIS
   i. A Geoscience Career Module being developed as part of the same SAGE diversity initiative was made available for a pilot run, and
   ii. Ground Penetrating Radar (GPR) equipment was provided by the SAGE facility with technical help and funding to provide hands-on experiential learning for the students.
3. Created a geoscience minor to give visibility to geoscience courses and overall geoscience as a further academic or career path.

Based on the success of the first summer, the FVSU-IRIS research team is currently developing a second summer research plan. A long-term goal of the overall project is to provide a model which could be used by other HBCUs that have an interest in increasing/building their geoscience opportunities. The last three IRIS interns who graduated this Spring (2022) each of three have admissions to PhD programs in Geophysics starting Fall 2022. IRIS-FVSU long term partnership can serve as a DEI model in the Geoscience and can bring in diverse and new groups of students thus strengthening future STEM workforce of the nation.

Figure 1: The picture to the left was taken in Summer 2021 and shows FVSU students and faculty interacting with an expert and learning how to generate data using a GPR.