



**Shange R.** omics to assess the ecology of microbial  
1<sup>st</sup> Annual 2iE-Tuskegee Summer School: Water, Energy,  
Environment and Food Security in a Changing Climate. Ouagadougou, Burkina Faso. June 2012.

**Shange R.** and R.O. Ankumah. 2012. Assessing the structure and membership of soil microbial communities cultivated under an industrial poultry production system. In: ASA Southern Regional Branch Meeting 2012. Birmingham, AL.

Jones S., **Shange R.**, and R.O. Ankumah. 2012. Assessing soil functional status across an agroecosystem using soil phosphatase enzymes. In: ASA Southern Regional Branch Meeting 2012. Birmingham, AL.

Keith J., Odom L.J., Ankumah R.O., and **R. Shange**. 2012. Influence of Transgenic (*D4E1*) and Non-Transgenic Cotton on Soil Phosphodiesterase Activity Over a Growing Period. In: ASA Southern Regional Branch Meeting 2012. Birmingham, AL. (*Award-winning presentation:*

**Shange R.** (2011) Assessing the impacts of agricultural land use on the structure and composition of soil microbial ecosystems: a multiple case study in coupled human-natural systems. Tuskegee University, Tuskegee, AL.

**Shange (Shirk) R.** (2006). The Political Reality of Modern Biology. Howard University, Washington, DC. (Unpublished Manuscript)

### **GRANTS & FUNDED PROJECTS**

**Co-PI** (10%). Tuskegee University-Black Belt Photoirrigation Project (TU-2BP). Natural Resource Conservation Service-USDA Conservation Innovation Grant program. Total Direct Costs: \$1,868,523. **PI:** Walter Hill, Ph.D.

**Participating Faculty** (5%). *Decesion pending.* Tuskegee University Jobs Accelerator Project. Rural Development-USDA Rural Jobs Accelerator Challenge. **PI:** Walter Hill, Ph.D.

### **COURSES TAUGHT**

Genetics  
Cell and Genetic Biology  
Math, Computers, and Bioscience  
Introduction to Soil Science Lab  
Molecular Cell and Genetic Biology Lab  
Environmental Biology Lab (Team Taught)  
Introduction to Human Biology (for non-majors)  
General, Organic, and Biochemistry (for non-majors)

### **PROFESSIONAL ASSOCIATION MEMBERSHIPS**

Ecological Society of America  
Soil Science Society of America  
American Society for Microbiology  
Alabama Academy of Science

### **AWARDS/ACHIEVEMENTS**

U.S. Fish and Wildlife/Wildlife Society Faculty Fellow (Summer 2012)  
Tuskegee University/University of California at Davis CREATE-IGERT Trainee  
in biotechnology/environmental sustainability, October 2008  
66<sup>th</sup> Profession Agriculture Workers Conference Graduate Student Oral  
Presentation Competition: Third Place, December 2008  
Ronald E. McNair Graduate Fellow (2004)

### **SOFTWARE/COMPUTING COMPENTENCIES**

Bioinformatic software packages/algorithms:  
Related to microbial ecology:  
MOTHUR, Ribosomal Database Project Pyrosequencing Pipeline,  
QIIME, FastUnifrac  
More generalized tools that can be used with many biological systems:  
Geneious, JBrowse, Velvet Assembly, NCBI Databases, UCSC Genome  
Browser, and other on-line applications.

