



January 21, 2017

USDA-NIFA Grant: Equipping Wayne County High School Students for careers in Bioenergy, water and wastewater management

The Agricultural Technical Institute (ATI) and Ohio Agricultural Research and Development Center (OARDC), both in at The Ohio State University have been awarded a USDA-sponsored grant to train high school students from Wooster high school and Northwestern high school (both in Wayne County, Ohio) in technical skills relevant to the Bioenergy, Water and wastewater management industries. The grant will run from 2017 to 2018 (in summer of each year).

2017 Program:

April (date to be arranged): An in-school demonstrative session will take place at both high schools by a team from ATI and OARDC. Anaerobic digestion, biomass deconstruction, enzyme kinetic mimicry and bioethanol generation, among other experimental settings will be presented to a cross section of students.

June 7th to June 30th

Ten (10) students from Northwestern high school will undergo hands-on training sessions at ATI and OARDC. Training session will run from 10:00AM to 5:00PM depending on the techniques. Some training session will be shorter due to the nature of the techniques.

July 5th to July 28th

Ten (10) students from Wooster high school will undergo hands-on training sessions at ATI and OARDC. Training session will run from 10:00AM to 5:00PM depending on the techniques. Some training session will be shorter due to the nature of the techniques.

July 31st

Career workshop: All participants from both high schools will attend a joint career workshop at ATI. The career workshop will highlight job opportunities in the bioenergy, water and wastewater management sectors in the state of Ohio and the beyond. There will be a panel of industry experts and university faculty at the workshop.

August 4th

Field trip: A field trip for all participants from both high schools to a bioenergy, water or wastewater management plant/factory.



Participants will be responsible for their daily commute to campus during the training sessions. Transportation for the field trip will be covered by the grant.

Some of the techniques that will be taught to participants during the training sessions include;

High performance liquid chromatography (HPLC)
Gas chromatography
Polymerase chain reaction
DNA transformation of bacteria
DNA gel electrophoresis
Protein gel electrophoresis
Analysis of total nitrogen and phosphorus in soil and water samples
Fermentation Technology: Bioethanol and butanol/2,3-butanediol
Anaerobic digestion
Biomass deconstruction for sugar generation
Enzymatic assay
Microscopy
Activated sludge system
Chlorination of treated water

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